Soap

BOLOS
Thrower)
, Rome

Enduring QUALITY

WHEN you incorporate Ungerer perfuming materials into any of your Soap products, you are insuring odor persistence. The enduring quality inherent in all Ungerer products guarantees that result. Our strict adherence to these quality standards suggests in many ways the classic sculptory of ancient Grecian times, which was in that age a leading exponent of Enduring Quality.

•

UNGERER & CO.

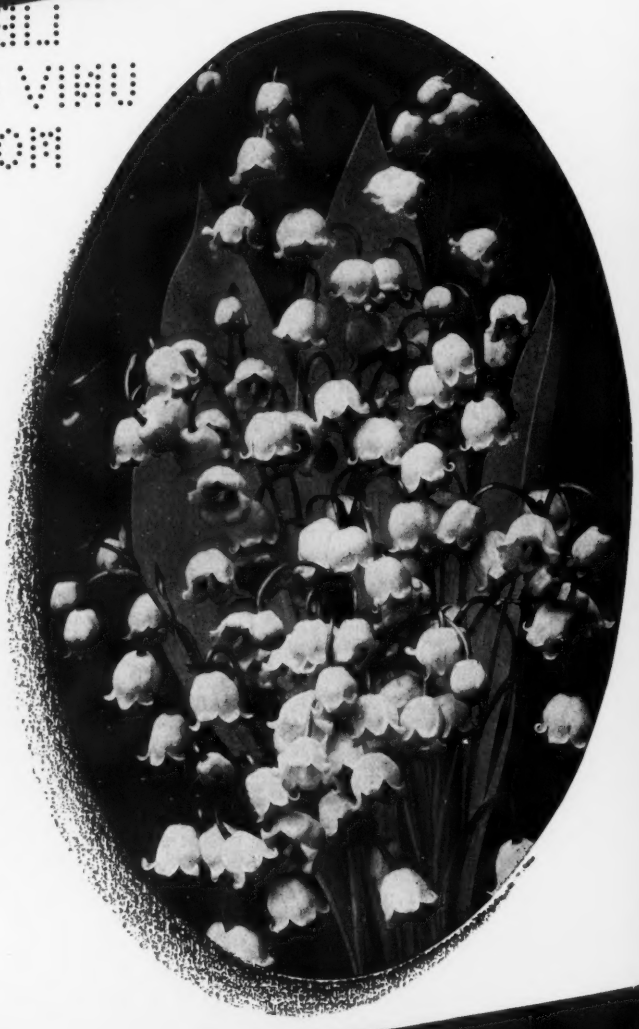
13-15 WEST 20th STREET NEW YORK

and Sanitary Chemicals

MUGANTHEME

UNIV OF IDAHO
LIBRARY
MOSCOW

by Chuit, Naef & Cie



MUGANTHEME is truly the Lily of greatest utility. This modern Muguet base is being used with most pleasing effects and equally good results in perfume extracts, creams, powders of all types and lotions.

The Muguet note in modern perfumery has a much wider application than is generally supposed. It imparts a genuine sweetness and floralcy not otherwise obtainable, to all types—florals, bouquets and orientals.

Currently, the decided popularity of floral bases recommends your consideration of Mugantheme. Have you tried it in that new perfume you are studying?

$17.50 per pound

Your Trial Ounce $1.35

Firmenich & Co., Inc.

135 FIFTH AVENUE - NEW YORK
CHICAGO OFFICE: 844 NORTH RUSH STREET

PURE CARNAUBA WAX EMULSIONS BOW TO

SYNTHAX

THE DISTINCTIVE SELF-POLISHING FLOOR WAX

With this new polish, floors now retain the beautiful luster which was once thought possible only with the pure Carnauba Waxes.

The combined experience of a generation of scientific men and the supreme touch of practical genius at last perfects in this new product *a synthetic liquid wax* which may ultimately replace the standard accepted formulae of all liquid waxes.

This amazing development of industrial chemistry has already successfully withstood the challenge of pure Carnauba Wax. It offers at a moderate price a finish which in every essential equals or surpasses the finer waxes of the industry.

SCIENCE FILLS THE RAW MATERIAL NEED

The 12% solids in this product are NOT pure Carnauba Wax but the long-sought blend of treated vegetable derivatives, which give all the essential characteristics of Carnauba Wax.

A PREDICTION COMES TRUE

The quick (20 minutes) self-luster developed by the film is equal to that of any self-polishing liquid wax. Its light grey color makes it suitable for any type floor, light or dark.

NOT NOVELTY ALONE, BUT PERFORMANCE

The fixed surface tension of this wax gives it uniform spreading qualities to assure a perfect film with an average coverage of 1500-2000 square feet on first coats (depending upon porosity of surface) and 2250 square feet on second coats.

A FRESH NEW SALES APPEAL

The *brilliancy* of the strong wax film equals that of the finest waxes, including even many of those of higher solid content.

THE QUICK PROTECTION OUR TIMES DEMAND

This new wax creation becomes *almost instantly waterproof*. Within 30 minutes after setting it will not water spot or wash up (yet it can be removed easily by simple solutions of mineral soap solutions plus ammonia).

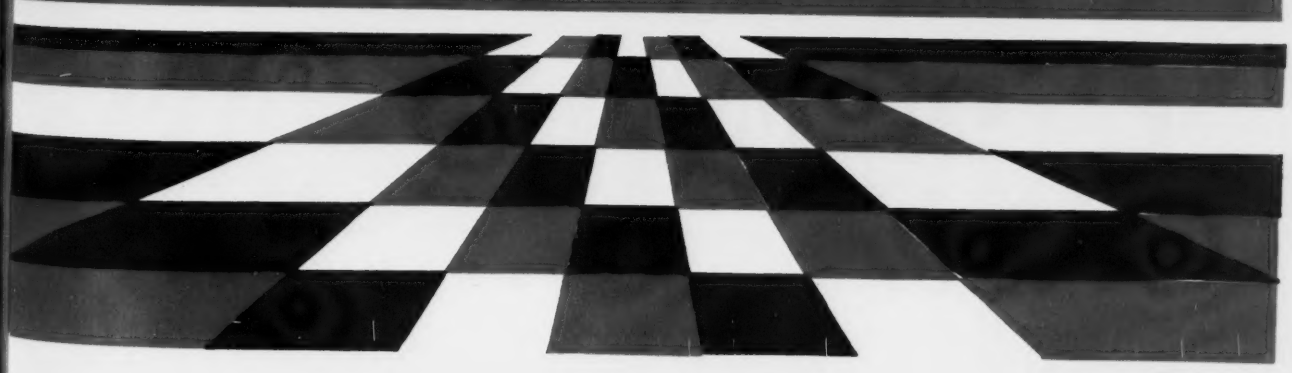
THE SAFETY-TREAD THAT'S WELCOME NEWS

In *Slip Protection* the surface far excels pure wax films with their harder films. Even those who reject waxes for safety reasons, will welcome this safe floor polish.

★ *Its economy and low price will amaze you!* ★

FULD BROS.
BALTIMORE, MARYLAND

MANUFACTURERS OF A COMPLETE LINE OF SANITARY CHEMICALS EXCLUSIVELY FOR THE JOBBER



A Much Abused Word

Though quality is often a much abused word, it is always of first importance to buyers of cans.

It is just here that Crown Can has so much to offer, thanks to extensive buying connections and unusually fine facilities for the fabrication of prime quality containers.

With Crown, control is the watchword. Control of plate, control of dies and tools, control of all equipment by the most painstaking and unremitting inspection and supervision.

In short, Crown offers the progressive can buyer a thoroughly comprehensive can service backed by an interpretation of quality second to none.

CROWN CAN COMPANY, PHILADELPHIA, PA.

Division of Crown Cork and Seal Company

BALTIMORE ST. LOUIS HOUSTON MADISON ORLANDO
FORT WAYNE NEBRASKA CITY

CROWN CAN

INDEPENDENT AND HELPFUL

Soap and Sanitary Chemicals

Volume XVI
Number 9

Reg. U. S. Pat. Office

SEPTEMBER 1940

•

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 77.

MEMBER AUDIT BUREAU OF CIRCULATIONS

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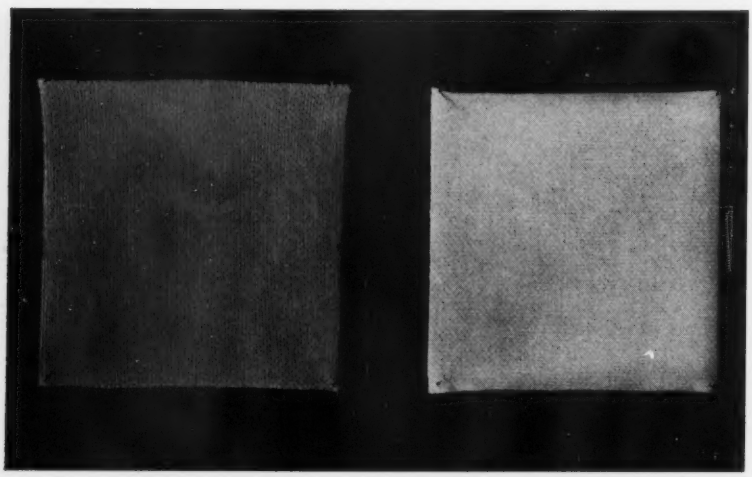
Published by

MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

Subscription rate, $3.00 per year. Foreign, including Canadian, $4.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Reentered as second-class matter, Feb. 9, 1938, at Post Office, New York, under act of March 3, 1879. Mail circulation, August, 1940, issue, 3,949 copies. Total distribution, 4,300.

DU PONT Tetra Sodium Pyrophosphate

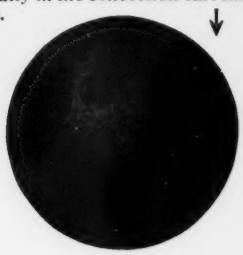
. . Prevents the Formation of Insoluble Soap



A soiled piece of toweling was cut into two swatches. The swatch on the left was washed ten times in warm water containing 300 parts per million hardness with sufficient soap to cause sudsing. The swatch on the right was treated in like manner except that the wash water used each time contained 0.1% Tetra Sodium Pyrophosphate. The gray, drab shade of the cloth on the left is apparent.

The photomicrograph shows the sticky precipitate formed when soap is added to water containing calcium and magnesium salts. Notice how the particles have gathered together into flocks and chains.

The photomicrograph shows the fine particles formed by soap in the same water, to which 0.1% Tetra Sodium Pyrophosphate was first added. These particles are so small that they drift readily in the convection currents within the drop.



IN THE process of washing, dirt and grease are removed from the fine threads of the fabric. The dirt particles are still in the washing solution. When insoluble hard water soap particles are formed during the washing, the fine dirt particles adhere to the soap and are redeposited on the fabric (one cause of gray, drab washing). Therefore, the formation of insoluble hard water soap particles must be prevented.

The action of DU PONT Tetra Sodium Pyrophosphate in preventing the formation of insoluble soap precipitates is two-fold. First, it has a definite capacity to solubilize hard water salts, especially magnesia, and in this way removes one of the components which cause precipitation of hard water soaps. Secondly, it forms a type of precipitate which is very fine and remains suspended throughout the solution passing through the meshes of the fabric without being deposited.

The advantage of preventing the formation of hard water soap, together with its definite action as an emulsifier and suspending agent, make DU PONT T. S. P. a desirable addition to washing compounds.

OTHER CHEMICALS

- Tri Sodium Phosphate
- Sodium Silicate
- Sodium Meta Silicate
- Caustic Sodium

DU PONT

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
GRASSELLI CHEMICALS DEPARTMENT
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HAND LOTION

guardian of gracious hands

chosen by a critical eye

. . . pleads for preference by the charm of its package. "To gild refined gold" . . . to convey the message of loveliness through the medium of a glass container is our accustomed art. Owens-Illinois Glass Company, Toledo, Ohio.

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Complete Packaging Service

GLASS CONTAINERS — CLOSURES — SHIPPING CARTONS

Wetting Agents

and

SOAPY LATHER

IT IS a known principle that liquids of lower surface tension spread over those of higher surface tension. The wetting power tends to improve as the surface tension decreases.

A plain good liquid *potash soap* is a wonderful wetter at a nominal price.

Furthermore, *foam* is an invaluable asset in detergency. It increases vastly the reaction surfaces between the air, dirt and water interfaces. It diverts the cleaning equilibrium toward faster completion of the job.

Soap foam fibrils have an esoteric tenacity, that just seems to pull the dirt away.

CONSULT CLIFTON

on

POTASH SOAPS

Vegetable Oil Soaps
Liquid Hand Soaps
Green Soaps
Liquid Floor Cleansers

as well as allied products such as

Coal Tar Disinfectants
Pine Disinfectants
Furniture Polishes
Cresol Solutions
Rubless Waxes
Perfumed Deodorizing Sprays.

Liquid Soap Dispensers

CLIFTON CHEMICAL CO., INC.

248 FRONT STREET **NEW YORK CITY**

ELIMINATE UNCERTAINTIES OF COST AND SUPPLY!

USE THESE FELTON PRODUCTS TO SOLVE YOUR ESSENTIAL OIL PROBLEMS!

Berganella

(Replaces Oil of Bergamot)

Sassafrin

(Replaces Sassafras artificial)

Lavenola

(Replaces Oil of Lavender)

Javonella

(Replaces Oil of Citronella)

PERFECT PERFUME MATERIALS FOR

★ ALL TYPES OF SOAPS
★ WASHING POWDERS
★ LIQUID CLEANSERS
★ POLISHES AND WAXES

FELTON Quality

FELTON CHEMICAL CO., INC.

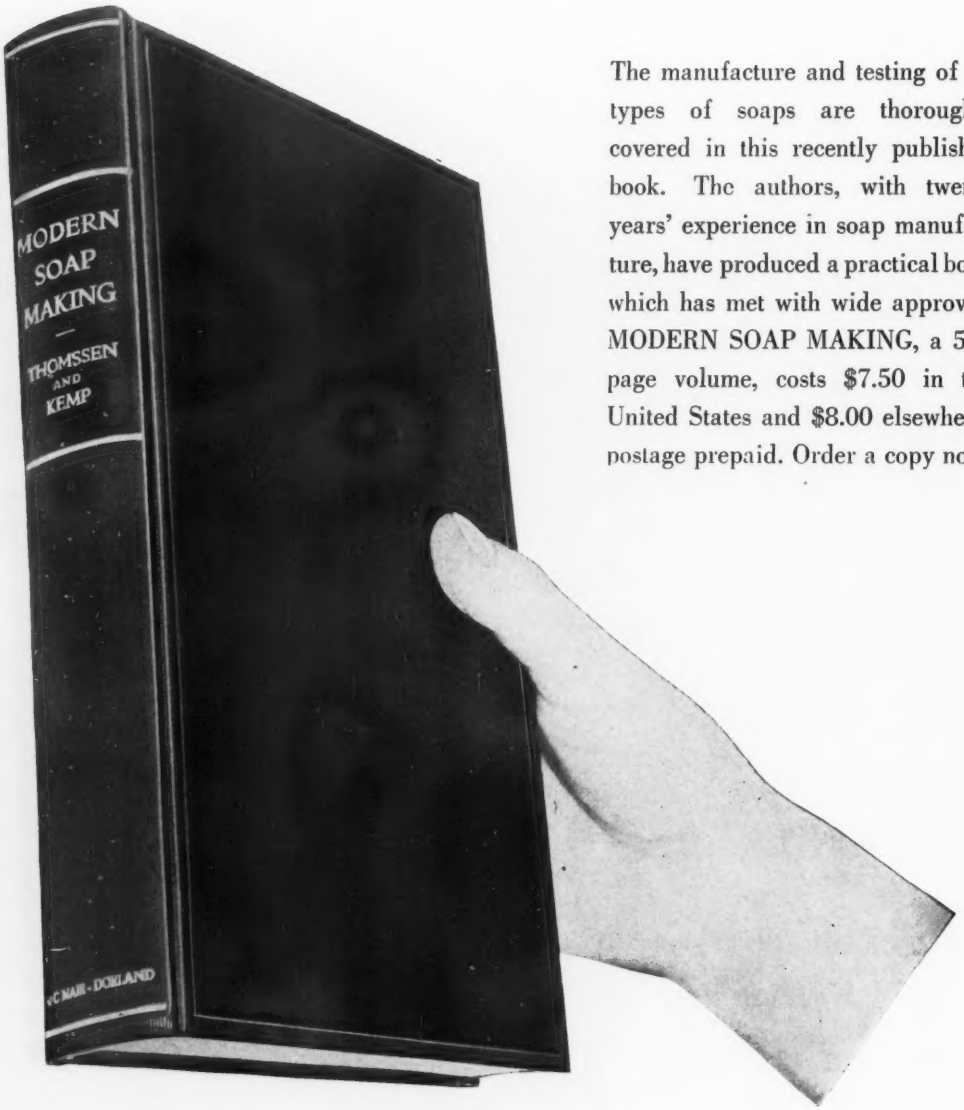
603 Johnson Ave., Brooklyn, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME OILS, ARTIFICIAL FLOWER AND FLAVOR OILS. STOCKS IN PRINCIPAL CITIES.

These four manufactured products possess important advantages over natural essential oils. Among them are dependable low price, uniform quality, ready availability, and a clean lasting fragrance that actually adds sales appeal to your products.

Write **NOW FOR SAMPLES AND QUOTATIONS!**

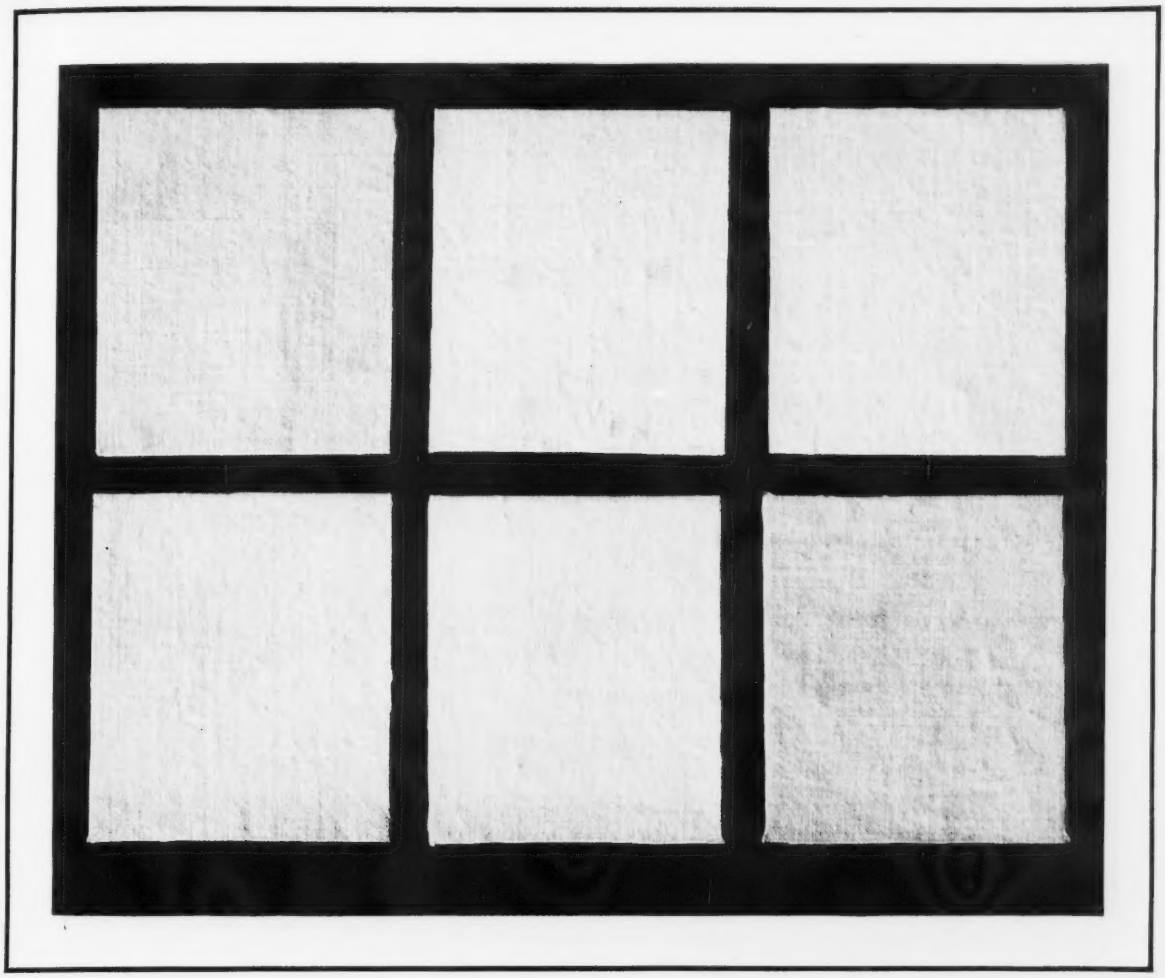
Every soap manufacturer needs a copy of this book!



The manufacture and testing of all types of soaps are thoroughly covered in this recently published book. The authors, with twenty years' experience in soap manufacture, have produced a practical book which has met with wide approval. MODERN SOAP MAKING, a 540 page volume, costs $7.50 in the United States and $8.00 elsewhere, postage prepaid. Order a copy now.

MAC NAIR-DORLAND CO., *Publishers*

254 WEST 31st STREET NEW YORK CITY



*

PQ SILICATES PREVENT "RUST STAINS"

• **ARE** your soaps and detergents effective in preventing discoloration of fabrics due to iron in water? Make them so by using one of the PQ Silicates of Soda. The effect of silica in sodium silicate in preserving the whiteness of cloth in the presence of ferrous sulphate is shown in the center cloth samples above.

A discussion with you of this or other properties of PQ Silicates does not obligate you. Address our Technical Division, Philadelphia, requesting a copy of "The Role of Silica in Soluble Silicate Cleansers".

*Solutions containing 30 p.p.m. ferrous sulphate in which cloth samples were washed:

UPPER LEFT	UPPER CENTER	UPPER RIGHT
0.1% Soap 0.2% NaOH 11.9 pH	0.1% Soap 0.2% $Na_2O.2SiO_2$ 11.3 pH	0.1% Soap 0.2% Na_2CO_3 11.5 pH
LOWER LEFT	**LOWER CENTER**	**LOWER RIGHT**
0.2% NaOH 11.9 pH	0.2% $Na_2O.2SiO_2$ 11.3 pH	0.2% Na_2CO_3 11.3 pH

SILICATES OF SODA

33 GRADES FROM $3Na_2O$, $2SiO_2$ to Na_2O, $3.9SiO_2$

PHILADELPHIA QUARTZ CO.

General Offices and Laboratory: 125 S. Third St., Philadelphia, Pa.
Chicago Sales Office: 205 W. Wacker Drive. Stocks in 65 cities.
Sold in Canada by National Silicates Ltd., Toronto, Ontario.

Works: Anderson, Ind., Baltimore, Md., Chester, Pa., Buffalo N.Y., Kansas City, Kans., Rahway, N. J., St. Louis, Mo., Jeffersonville, Ind., Utica, Ill.

Fragrant · Lasting · Economical · Modern

Alpine Violet

CYCLAMEN ALDEHYDE

"Alpine Violet" is highly economical because it is far more powerful than Hydroxycitronellal. Although an aldehyde, this product is extremely stable in soap and does not break down or turn rancid. It is non-irritant and does not discolor.

During the past few years "Alpine Violet" has found an important place in modern light bouquets. It holds its odor over long periods, and in most soaps the odor actually increases in intensity.

In considering "Alpine Violet," ask for help that we may be able to give you through our experience in blending this powerful synthetic into many soap formulas. Write Du Pont Aromatics Section, 40 Worth Street, N. Y. C.

AN "ALPINE VIOLET" FOR FINE PERFUMES IS ALSO AVAILABLE

DU PONT
REG. U. S. PAT. OFF.

Aromatics

E. I. DU PONT DE NEMOURS & CO. (INC.), ORGANIC CHEMICALS DEPARTMENT, FINE CHEMICALS DIVISION, WILMINGTON, DELAWARE

REPACKERS! COMPOUNDERS!

MAKE SOLVAY
TRADE MARK REG. U. S. PAT. OFF.

YOUR SOURCE OF RAW MATERIALS

for

Household Cleansers

Commercial Cleansers

Soap Powders

Bath Crystals

Household Bleach

Drain Pipe Solvents

Demothing and Deodorizing Preparations

Termite Control

FOR HOUSEHOLD CLEANSERS: Solvay manufactures a complete line of alkali products, from mild to strong alkalies and scouring powders, that may be used as the base in household cleansers for practically every housecleaning requirement.

FOR COMMERCIAL CLEANSERS: Solvay alkalies, in varying strengths, from straight Soda Ash and Caustic Soda to Snowflake* Crystals, are available to repackers for preparing cleansers for metal and other types of heavy duty industrial cleaning.

FOR SOAP POWDERS AND SOLUTIONS: Many Solvay Alkalies, such as Solvay Fluf* and 58% Light Soda Ash and special cleanser mixtures, are ideally suited for mixing with dry or wet soaps.

FOR BATH CRYSTAL BASE: Solvay Snowflake Crystals—used by many of the country's leading producers of bath crystals—have built up a reputation for their non-caking features and beautiful appearance, ready solubility, and their ability to accept coloring and perfumes. Snowflake Crystals are a mild cleanser. They *soften the water,* DO NOT HARDEN IT!

FOR HOUSEHOLD BLEACHES: Solvay Liquid Chlorine and Caustic Soda are used in making household bleach. The Solvay bleach testing kit—a simple means of determining percentage of available chlorine—is available at cost. Write for more information.

FOR DRAIN PIPE SOLVENTS: Solvay 76% Flake and 76% Ground Caustic Soda, with additions of other materials, are widely used by manufacturers of drain pipe solvents.

FOR DEMOTHING AND DEODORIZING: Solvay Para-dichlorobenzene is widely used as a demothing and deodorizing agent. Solvay Para-dichlorobenzene in 10 different crystal grade sizes is available for all purposes. It may be dyed, perfumed, and poured or pressed into blocks as desired. In crystal form, it makes up attractively in transparent packages.

FOR TERMITE CONTROL: Solvay Ortho-dichlorobenzene is a recommended product for extermination of termites. It may be sprayed or brushed on timber, or poured into a trench around infected wood. Write for complete information on these and other Solvay products. ➡

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

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Boston	Cincinnati	New Orleans	Pittsburgh
Charlotte	Cleveland	New York	St. Louis
Chicago	Detroit	Philadelphia	Syracuse

* Reg. U. S. Pat. Off.

SOLVAY SALES CORPORATION
40 Rector Street, New York, N. Y.

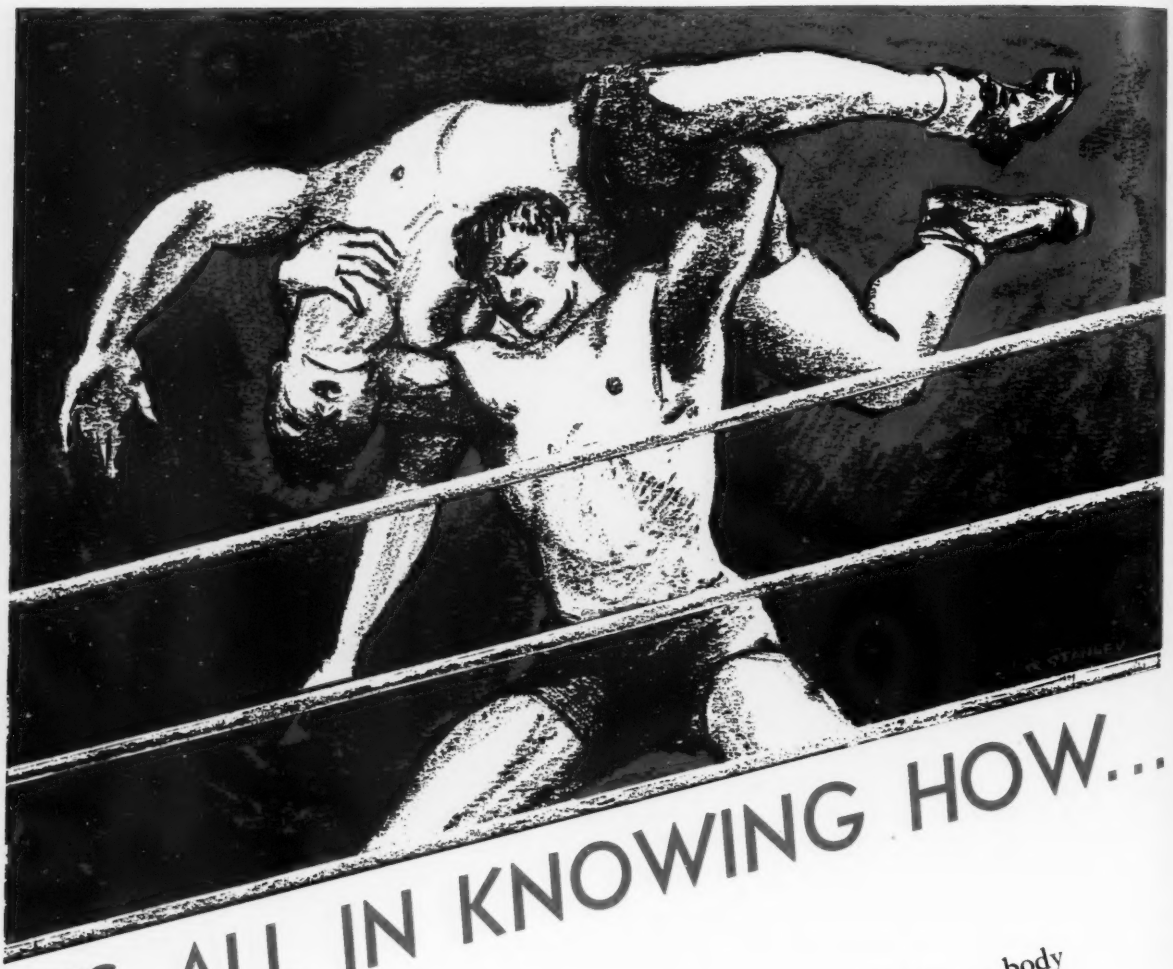
Gentlemen: Please send me a copy of the Solvay Products Book, which gives complete information on all Solvay Products.

Name.....

Company.....

Address.....

City..... State..... AJ-940



IT'S ALL IN KNOWING HOW...

Grapple . . . head-lock . . . flying tackle . . . body slam . . . it's the ability to do what you're doing right that distinguishes the champs from the chumps.

That's why Ampion Soap Products are acknowledged as "champion" . . . because they give a consistently high performance, unvarying in quality. This uniform efficiency is your assurance of satisfied customers and their welcome repeat business.

- Liquid Soap Dispensers
- Liquid Soaps and Bases
- Oils, Soaps and Liquids
- Disinfectants
- Insecticides
- Waxes and Polishes
- Deodorizing Blocks
- Containers
- And Allied Products

AMPION CORPORATION
4-88 FORTY SEVENTH AVE.
LONG ISLAND CITY, N. Y.

Aromatics VERONA

UNDER the trade name Aromatics Verona, we bring to your attention from time to time a series of Aromatic Chemicals of which we are justly proud.

It is our intention to serve the industry under this trade name with Aromatic Chemicals of the utmost purity and of the highest quality.

We believe that it is to the interest of the user of Aromatics to investigate these products and we will be glad to send adequate working samples.

Among the leading items produced are:

Alpha Amyl Cinnamic Aldehyde
Ionone Methyl
Ionone Ketone
Phenyl Ethyl Alcohol
Para Cresol Ethyl Ether
Para Cresol Methyl Ether
Ethyl Methyl Phenyl Glycidate

The products manufactured are naturally of a much wider range and cannot be noted in the space available.

May we mail you a complete list?

AROMATICS DIVISION
GENERAL DRUG COMPANY

170 Varick St., New York
907 Elliott St., W., Windsor, Ont.

9. S. Clinton St., Chicago
Transportation Bldg., Los Angeles, Cal.

IONONES

GERANIOLS

METHYL IONONES

PHENYL ETHYL ALCOHOL

VAN AMERINGEN-HAEBLER, INC

315 FOURTH AVENUE, NEW YORK CITY

ARE MAJOR PRODUCERS OF THESE AROMATIC CHEMICALS

FOR THE SOAP INDUSTRY.

WE WILL BE PLEASED TO SUBMIT SAMPLES AT YOUR REQUEST.

Good Soil yields Good Crops

...and good basic materials help make good factory products. That's why so many of the country's most exacting buyers turn to Niagara Alkali Company when they require Caustic Soda, Caustic Potash and Carbonate of Potash—because Niagara's top quality and dependable uniformity are recognized as the standard. If you use these materials, think of Niagara as a reliable source of "good soil" for producing high quality results.

Niagara ALKALI COMPANY

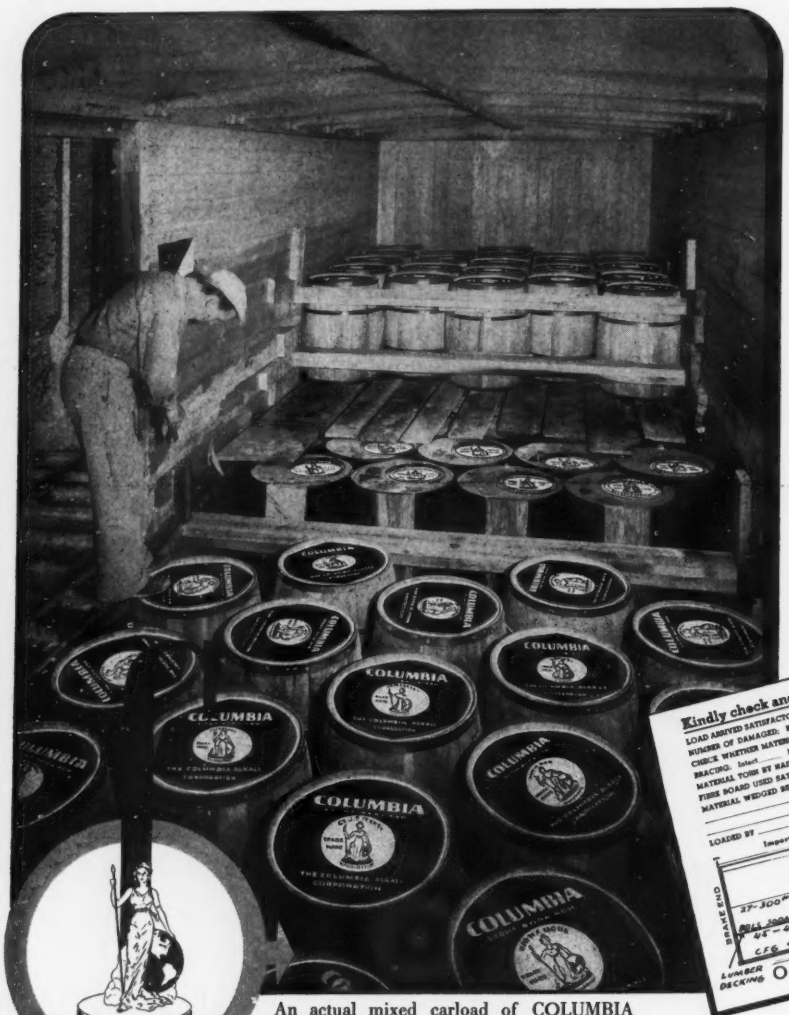
60 EAST 42nd STREET, NEW YORK, N. Y.

Affiliated with Electro Bleaching Gas Company, Pioneer Manufacturer of Liquid Chlorine

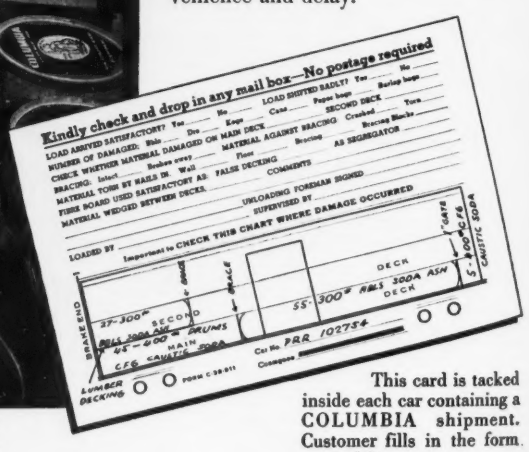
PARA
CAUSTIC SODA
CARBONATE OF POTASH
CAUSTIC POTASH

Are You Enjoying These Benefits of *Scientific* Packing?

A shifting cargo may not cause a wreck upon the rails as it does at sea, but serious damage to valuable freight often results from lack of scientific packing by the shipper. ★ COLUMBIA Alkalies are packed to withstand the roughest treatment a hurried freight crew can give them. Through the coordination of various departments responsible for shipping, a careful study was made of loading methods based on customer report cards like the one here pictured. The bracing in mixed carloads as seen in the photograph is by fixed formula of proven merit. Equally scientific provisions for the protection of your order are made in the packing of bagged goods in cars with drums or barrels, or the loading of tank cars. ★ This "plus" responsibility which we assume saves COLUMBIA users much inconvenience and delay.



An actual mixed carload of COLUMBIA Flake Caustic and Light Soda Ash being inspected by the loading foreman just prior to sealing of car.


Kindly check and drop in any mail box—No postage required

LOAD ARRIVED SATISFACTORY? Yes ___ No ___ LOAD SHIFTED BADLY? Yes ___ No ___
NUMBER OF DAMAGED: Bbls ___ Drs ___ Kegs ___ Bags ___ Case ___ Paper bags ___ Burlap bags ___
CHECK WHETHER MATERIAL DAMAGED ON MAIN DECK ___ SECOND DECK ___ Yes ___
BRACING: Intact ___ Broken away ___ MATERIAL AGAINST BRACING: Bracing ___ Crushed ___ Bracing Blocks ___
MATERIAL TORN BY NAILS IN: Wall ___ Floor ___ AS SEGREGATOR ___
FIRE BOARD USED SATISFACTORY AS: FALSE DECKING ___ Bracing ___
MATERIAL WEDGED BETWEEN DECKS. COMMENTS
UNLOADING FOREMAN SIGNED
LOADED BY ___ SUPERVISED BY ___
Important to CHECK THIS CHART WHERE DAMAGE OCCURRED
BRAKEMAN
LUMBER DECKING
FORM C 38-811
DECK
SECOND
MAIN
DECK
CAR No. PRR 102754
Cooperage

This card is tacked inside each car containing a COLUMBIA shipment. Customer fills in the form upon delivery.

COLUMBIA

SODA ASH · CAUSTIC SODA
LIQUID CHLORINE
SODIUM BICARBONATE
CALCIUM CHLORIDE
CALCENE & FILLER
MODIFIED SODAS

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Plant: Barberton, Ohio
CHICAGO · BOSTON · ST. LOUIS · PITTSBURGH · CINCINNATI · CLEVELAND · MINNEAPOLIS · PHILADELPHIA

HERE'S HOW to Make Hospital Surgical Soap Business "ALL YOURS"!

Surgeons like this soap. They like this dispenser— Hospitals enjoy ECONOMY

"BUCKEYE" Surgical LIQUID SOAP

IT WILL PAY YOU to look into this—

First, satisfy yourself that "BUCKEYE" Surgical Liquid Soap lathers freely and cleanses thoroughly, *without producing the irritation* or roughness due to harsh soaps. It is a mild, neutral soap, produced scientifically from pure vegetable oils.

It "goes far" in dispenser use: one part "BUCKEYE" Liquid to three parts of distilled water means greater economy.

DISPENSER *GIVEN* FREE

You can actually OWN this practical, approved Dispenser without charge—not merely have the use of it on loan.

Your supply house can give you details. We will be pleased to send you a generous free trial sample of this soap if desired.

Cash in on this Sensational, PROVEN PLAN to WIN and HOLD Customers for **"BUCKEYE" Surgical LIQUID SOAP**

This Remarkable FREE OFFER Now Being Announced to the Nation's Hospitals . . . Be Prepared to Meet the Demand, and PROFIT!

Dealers in "BUCKEYE" Surgical Liquid Soap now have EVERY advantage in selling the Hospital business! In addition to the recognized superior quality of this Soap itself . . . its economy for the user . . . and its attractive price—you now have the backing of National Advertising to Hospital Buyers . . . featuring a real Merchandising Plan that CLICKS!

Think of being able to GIVE Hospitals a modern, highly practical Dispenser—selling to users for $25.00—at no cost to the Hospital or to yourself! That's exactly what you CAN do. You can supply the Dispenser immediately with initial order and guarantee that it will become the hospital's OWN PROPERTY as soon as YOU have delivered a specified minimum quantity of "BUCKEYE" Surgical Liquid Soap.

THIS MEANS "PERMANENT" CUSTOMERS

This exceptional offer is possible because users who get acquainted with "BUCKEYE" Surgical Liquid REMAIN users! "BUCKEYE" S. L. Soap is a combination of vegetable oils— a neutral soap which will not irritate the tenderest skin even with the repeated washings and scrubbings required every day of doctors, nurses and dentists. It contains full 40% anhydrous soap value. Its thick, creamy, abundant lather cleans thoroughly, quickly and gently. Used in the proportion of one to three parts of distilled water—its economy is another outstanding feature.

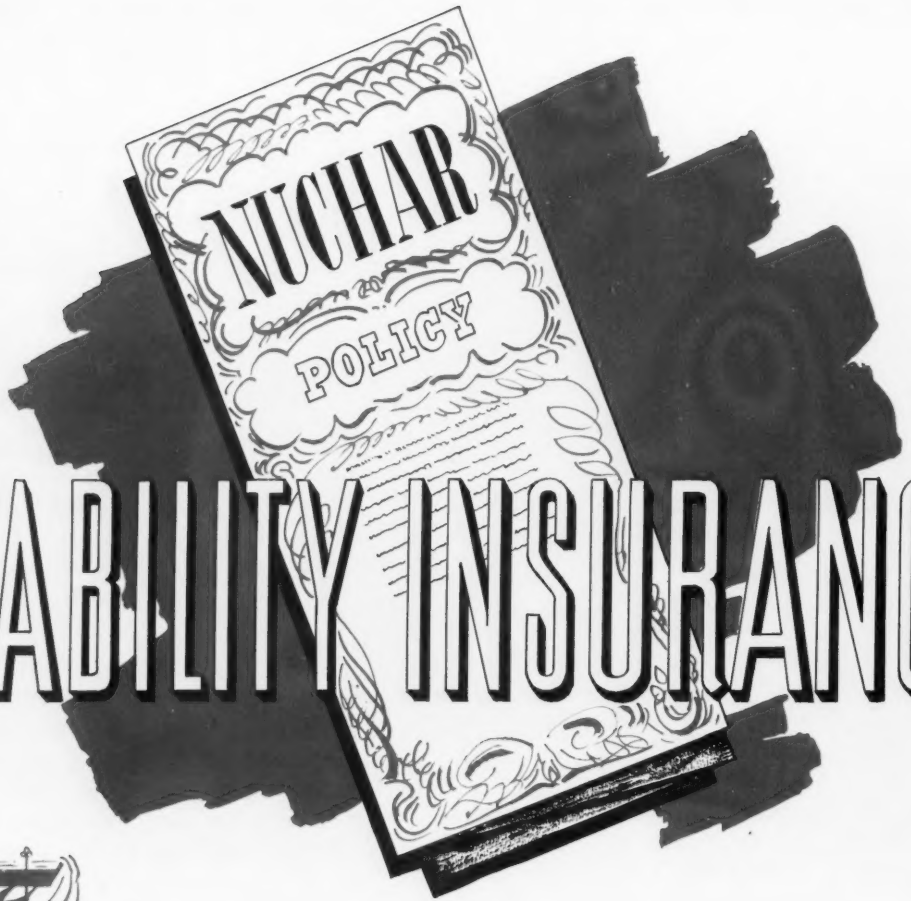
Be sure to get full information about how you can sell more hospital business with "BUCKEYE."

Please send full details of your FREE DISPENSER Merchandising Plan on "BUCKEYE" Surgical Liquid Soap.

Name .....

Address .....

City and State .....



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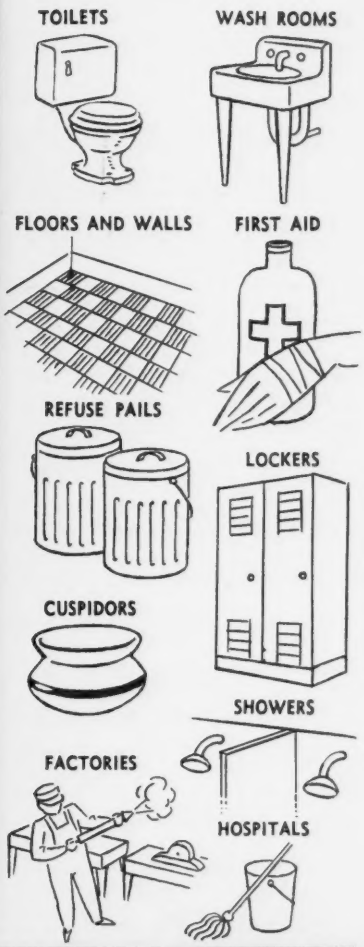

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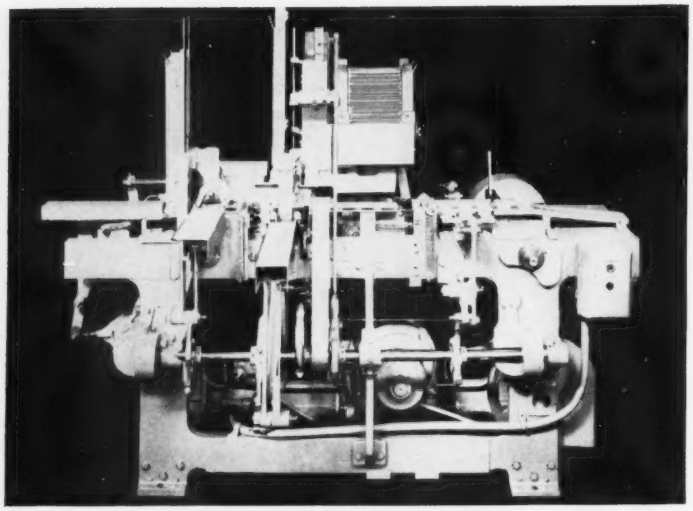

This machine sent to Messrs. E. C. DeWitt & Co., Chicago, in July this year, is their tenth Jones Cartoner.

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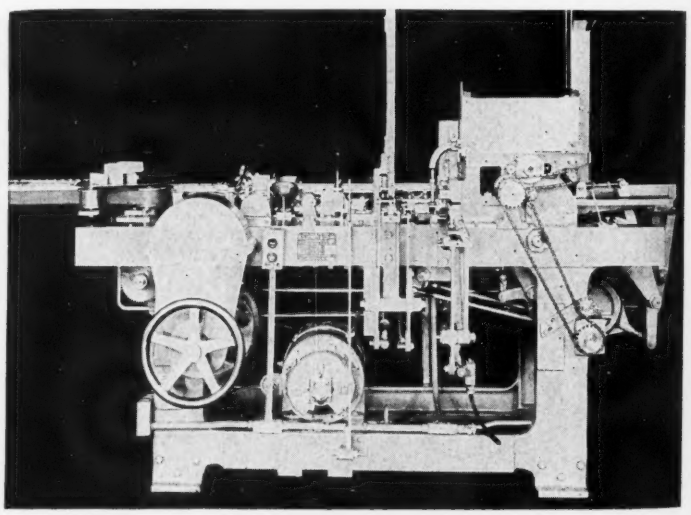

It is convertible to package the same product in the same mailing carton with a 32-page booklet instead of leaflet.

The leaflet magazine is replaced by a magazine to fit the 3½″ x 3½″ booklets in five minutes, when the machine is again ready for work.

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As the Editor sees it..

IN a recent report on laundry soap performances by "Consumers Union," New York, the point is made that any pure soap is safe for washing silks, woolens, and other delicate fabrics, and that soaps containing meta or pyrophosphates are equally as safe as pure soaps and far more efficient and inexpensive. They state no brand of pure soap is any better than any other brand, and that many are cheaper than the most widely-advertised brands. The report covers in all forty-four brands of various types of laundry soaps, and it is gratifying to note that "all of the soaps tested were within the allowable limits for purity." Here we have a significant indication of the trend in the soap industry, for we do not believe that statement could have been made twenty years ago.

Among other things, the report implies that the lesser-known brands of pure soap should be purchased in preference to those widely advertised solely because the former are cheaper. In this recommendation, we question that the report stands on solid ground. From years of experience, we know that ninety per cent of soap products represented to be "pure" and not meeting this designation for one reason or another, have been products in the class of lesser-known brands. Except where a consumer has had definite experience with the product, buying an unknown product may leave the door open for gyppery. And how is the consumer to tell a "pure" soap? The report in question rates forty-four soaps. What about the other seven or eight hundred brands on the American market?

Now, let us make it clear that we carry no torch for the more widely-known soaps or their makers. However, we feel that cheapness alone is a mighty poor basis upon which to recommend the purchase of any article. Buying a pig in a poke simply because it is cheaper has always represented to us the very essence of false economy.

SOME months back, the lady purchased a tube of shaving cream for her husband. We happened to be present when she removed the tube from its handsomely printed carton, and recall her expressed amazement when she observed the smallness of the tube compared to the carton in which it was packed. We must admit that the combination reminded us very much of little Benny running around the house in Uncle Henry's coat. But the lady didn't think it was so funny. She felt that she had been cheated and did not hesitate to designate the well-known manufacturer of the product as a "robber."

But now the reform days are here. No longer will the lady find a little tube hidden away in a giant carton, well padded with booklets and corrugated paper and the tube crimped both deep and wide. Now she is being handed a much smaller carton, tailored to fit the tube. And it is our guess that she well remembers the giant-size cartons of her previous purchases, and forgetting all else, feels that she has been "robbed" once again.

In short, the manufacturer takes two raps instead of one in this over-size carton rumpus, first for his error, and second, for correcting it. But he is probably consoled by the fact that his competitors,—the ones who really made him use those big over-size car-

tons because they started it, and it was all their fault anyway,—have likewise been made to feel the reforming influence of the Federal Trade Commission, and the wrath of a consumer stung.

ACCORDING to the story, the prize fighter was big and clumsy. He aimed a round-house right at his opponent, who ducked, and the swing continuing on around, ended up on his own chin and put him down for the count. This story was called to mind recently when we listened to a radio broadcast of a baseball game sponsored by the nation's leading brand of floating soap,—toilet or laundry, depending on whether you are washing yourself or Uncle Joe's underdrawers. In this particular broadcast, it was a toilet soap and the emphasis was on the point that it washed you clean as a whistle and left no odor of perfume behind —"no sissy odor."

Inasmuch as this broadcast was a play-by-play description of a baseball game, we judged that "no sissy odor" was supposed to have a special appeal for big he-guys who sweat freely and who don't like perfume, even in their soap. But it made us wonder what about the department down the hall that sells a very neat tonnage of quite highly perfumed toilet soap for the same company. Holy mackerel, what would these fellows think? And then we recalled the prize fighter story and got the idea somehow that somebody had missed a punch.

AMERICAN manufacturers of toilet soaps have already felt one of the secondary effects of German conquest of France in the form of sharply higher replacement costs of some soap perfuming oils. The British blockade may be expected to continue to curtail such exports. Fortunately there is a brighter side to the picture, too, as far as American soap manufacturers are concerned. This same blockade also cuts off shipments of high grade French toilet soaps to the American market. Although this business is not what it used to be some years ago, it is still sought after by those interested in the luxury soap field. Thus the door is open for American soap makers to strengthen their position in this market in which French soaps have long occupied a preferred position, largely, we have thought, on the basis of their "imported" atmosphere.

OLD-TIME kettle men of the soap industry will probably snort in disdain when they read that a California university has announced a course in the art of soap boiling and soap chemistry beginning this fall. We can hear their caustic comments that the place to learn to boil soap is at the kettle and not in a classroom. But we are constrained to remind them that times change and that these are revolutionary days in the soap business.

In order to illustrate just how far formal schooling has penetrated into our daily lives, we recall that when prohibition reached its demise a few years back, numerous schools were opened out and about the country for bartenders. These were termed "bartenders' colleges" and were designed to teach the younger generation what was supposed to be a lost art, that of mixing a drink while standing face to face with the thirsty customer. Bartenders of the old school rose en masse from the soda fountains and lunch counters behind which they had taken refuge during the lean years, and cried out in protest against this desecration of the noble art. But the young graduates, diplomas in hand, marched into the barrooms of the nation, and today they work side by side with the oldsters. Thus is progress. So let those old-timers of the soap kettle have a care before letting go with their jibes at college-taught soap making.

FLOOR CLEANING

What is used and why in floor scrubbing...viewing the problem all the way from fine marble down to greasy floors in garages

MANY a fine floor has been ruined by wrong methods of cleaning. For years, this warning has been dinned into the ears of maintenance men both by the manufacturers of floors and floor coverings and by the producers of floor cleaning materials. There is no question but that it has borne fruit and that the art of maintaining floor cleanliness stands on a firmer scientific foundation today than it did ten years ago. All the way from fine marble, through terrazzo, cork, rubber, linoleum, and wood, and on down to greasy concrete in factory or garage, this business of floor cleaning and the materials and implements with which it is accomplished have been elevated to the level of scientific specialties.

Economy in floor cleaning, like in anything else, cannot be judged by the results of a week or a month. The average life of flooring materials is years, and it is on this basis that costs, efficiency and results must be judged. Use of a cleaner or soap which at an immediate saving of a cent or two per pound shortens by several years the life of a flooring material representing thousands of dollars, can hardly be classed as economy. Sad experience has brought greater demand for the right product for the job and less emphasis on the cost of the materials involved, although there are still many who have yet to be properly impressed by such experience.

That this lack of the proper critical attitude in evaluating cleaning materials is common, has been borne out by recent studies of floor cleaning methods in various types of public buildings, factories and other establishments. Although an increasing number of maintenance men have made studies of their particular problems and know why they use certain floor cleaning compounds, the majority of those in charge of floor maintenance continue to follow hit or miss methods. It is so easy to save time in a floor cleaning job by using more concentrated solutions and less elbow grease, that this temptation is always present. The indiscriminate use of strong alkaline salts and gritty abrasives, popular among so many superintendents, certainly is an effective way to clean a floor in the shortest possible time. What this kind of cleaning does to the floor, however, is another thing. When the surface begins to pit, erode, rot or chip, as the case may be, after a few years of this treatment, the cleaning problem then becomes really a problem. And the maintenance man begins to wonder why his floors are not standing up as well as they should.

Even under indifferent conditions of use, the right type of cleaning materials for specific types of floors will keep floors and floor coverings looking presentable for an incalculably longer period of time. The ideal floor cleaning compound for any given kind of floor would be one that would give maximum cleaning with a minimum of effort, have no corrosive effect, leave the floor bright and free from streaks or residue and yet produce neither a slippery nor a gritty surface. Each type of flooring material is here taken in turn in an attempt to indicate the most suitable cleaning method for each individual surface.

Marble Floors

The porosity of marble is one of the main sources of trouble encountered in its care and maintenance. This is true especially of marble of the travertine type which is occasionally used as a flooring in modern public buildings. As the lodging of dirt deep in tiny pores gives some kinds of marble an unclean appearance which is difficult to correct, maintenance men often resort to use of alkaline salts such as trisodium phosphate or sodium metasilicate. These definitely have an injurious action on marble and eventually mar its fine satin-smooth finish. One theory attributes the destructive effect to a physical action. The dissolved alkaline salts, runs the theory, penetrate into the porous stone where they cannot be rinsed out, entirely. As the water evaporates, the

salts crystallizing out of solution expand against the marble exerting a pressure similar in effect to that of ice crystals in natural weathering of rocks. The resultant pressure causes spalling. Small pits form in the surface which multiply and enlarge as times goes on until the entire surface is injured beyond repair. Acting on this theory, the superintendent of one large office building permits his employees to use nothing but plain hot water and plenty of elbow grease in cleaning his marble floors.

Since marble is a comparatively soft stone, it is to be expected that scouring compounds containing hard abrasives would tend to scratch its surface. Scouring compounds, therefore, are barred as cleaners for marble unless it is definitely known that the abrasives in the formulation are of a soft, flaky nature.

Liquid scrub soaps of the potash type seem to be most suitable for cleaning marble floors. They give good cleaning action even when floors are not washed carefully, and they are easily rinsed off. Many types of soap including triethanolamine soaps, certain soda soaps, pine scrub soaps and others are recommended for use on marble floors by manufacturers.

Tile Floors

Tile floors of all kinds, whether they be vitreous, semi-vitreous, glazed or faience, are able to withstand the action of alkalies and other chemicals better than any other flooring materials. For this reason, soaps containing alkali salts, or alkali salts alone can be used in cleaning tile floors with little risk of impairing the surface or colors. Trisodium phosphate is commonly employed as a cleaning agent for tile because of its low cost. In connection with its use, the usual tendency of janitors and porters is to use a much more concentrated solution than is necessary. If the use of three or four ounces per pail is advised by their superior, they are likely to double or triple this amount to make their work easier. Even at the higher concentration, however, the alkali does not attack most tiles except after prolonged contact seldom met under ordinary conditions. Rinsing the floor after it has been washed should be done thoroughly to reduce slipperiness. Abrasive cleaning compounds are sometimes used to combat slipperiness but these tend to leave the tile unpleasantly gritty.

Soap powders and liquid soaps also find extensive use on tile. An oft-repeated claim of the superiority of soaps over alkali detergents is based on the lathering power of soaps. The suds, one theory maintains, presenting a larger surface area, provide better suspension of the dirt particles and remove them from the "reaction," allowing the reaction "to go to completion."

Terrazzo Floors

Fabricated of marble chips imbedded in concrete, terrazzo should be treated in much the same way as marble floors. Many of these floors are rapidly going to pieces due to the harsh alkali cleaners and abrasives that have been used in cleaning them. The expansion of alkali salt crystals that have seeped in between the chips creates a great deal of pressure and the marble chips will often release their hold and come out of the concrete base.

A rosin soap at a concentration of two ounces to ten quarts of water is used every night to clean the terrazzo on the main floor of one of the largest buildings in New York. In other parts of the building where traffic is less heavy, floors are cleaned much less frequently, of course. A proportion of only two ounces of rosin soap to ten quarts of water was found to be sufficiently effective although abrasives are occasionally used to supplement the work of the soap as required.

Old terrazzo floors upon which has been formed what is called an "alkali ice film" due to improper cleaning methods, can be reconditioned with an acid cleaner. Sodium acid sulfate should be mixed with an abrasive,—the proportion of abrasive depending on the thickness of the film. For general work, a mixture of 25 parts of the acid salt and 75 parts of abrasive is found to be satisfactory. This should be used only when absolutely required for even weak acids readily attack marble. When used they should be removed completely. After the film is removed, the appearance of the floor can be greatly improved by scrubbing with a neutral potash soap solution and then polishing with a machine.

Wood Floors, New

Wood is the most absorbent of all materials used for floors. An unsealed new wood floor is so adversely affected by water that scrubbing is now regarded as almost obsolete, and yet, unfortunately, considerable scrubbing is still being done. Wood floors that have been treated with penetrating seal and wax do not require cleaning with soap and water as long as the protective coating of wax is kept in good shape. The surface dirt can ordinarily be removed by brushing with a soft hair brush and then using a damp cloth over the brush to eliminate all traces of dirt.

Wood Floors, Old

In reconditioning old wood floors that have been saturated with oil for several years, or floors on which the finish has been badly worn and scarred, sanding is used to prepare the surface before the application of a seal. However, in many cases sanding would be too expensive or a waste of time. Where these conditions prevail, it is advisable to scrub the floor thoroughly with a strong alkaline soap solution. Abrasives should be avoided. The solution should be agitated on the floor with a stiff brush or a scrubbing machine to loosen the oil and grime and the floor should be rinsed with hot water several times and then mopped to take up as much water as possible. After thorough cleaning, the floor should be allowed to dry for twenty-four hours or more before applying penetrating seal. Where it is desired to remove the old wax from hardwood floors, a dilute solution of trisodium phosphate can also be used.

The use of soda soaps on wood floors has been frowned upon by some experts on the theory that the sodium will replace the potassium of salts naturally present in the wood, causing it to become pulpy and to splinter. While the validity of this reasoning has been questioned by some soap manufacturers as slightly far-fetched, most of them agree that vegetable oil potash soaps are best for wood floors wherever the use of soaps is necessary.

Linoleum Floors

Linoleum and similar linseed oil composition floors should last for many years and will if properly maintained. The most important rules in cleaning linoleum are to avoid using abrasives and soaps or detergents with a strong alkaline reaction. As one linoleum manufacturer phrased it, "Don't use any cleaner on linoleum that you wouldn't use on your face." Alkalies attack linoleum, softening it and destroying its wearing properties in time, while abrasives cut the top surface. When cleaning is necessary, a mild potash soap made from linseed oil, soy bean oil, or corn oil is generally recommended. The soap should be rinsed away thoroughly, using clear water which should be used sparingly so that the floor will dry as quickly as possible. Water should never be allowed to get underneath the floor covering. The floor must always be allowed to dry thoroughly before wax is applied. In the event that the cleaner is not entirely removed before waxing, the slipperiness of the surface is liable to be greatly increased. Sweeping compounds containing oil, sand or chemicals should not be used, nor should gasoline, benzene or other organic solvents be permitted to come in contact with linoleum flooring. They soften and discolor the floor.

Cork Tile

The same precautions followed in cleaning linoleum should be observed in maintenance of cork tile. It is, however, more resistant to abrasion, but is more susceptible to absorption of moisture than linoleum. Care should be taken, therefore, not to use too much water in washing it and to avoid water getting under the cork tile where it would have a tendency to cause swelling and rotting.

Ewing Galloway

Rubber Floors

Apparently rubber floors are the only type of floor surface on which all soaps are specifically tabooed by floor manufacturers. The nature of rubber floorings is such that almost every kind of scrubbing or scouring compound is said to have a harmful effect upon it. Neither alkaline nor acid cleaners should ever be used. Abradant cleaners which come in powder form should also be avoided. Although sweeping will usually suffice for the maintenance of rubber floors which are protected with wax, some cleaning is eventually necessary to remove traffic marks and dirt film. The manufacturers of rubber tile recommend their own cleaning powders, the active ingredient of which appears to be sodium sesquicarbonate. Just why

(*Turn to Page* 113)

CEYLON

Based on a personal survey made in Ceylon

THE family of *Gramineae* comprises a number of strongly scented grasses whose essential oils are known as *Cymbopogon* or *Andropogon oils*. Palmarosa, gingergrass, lemongrass and citronella oils, all distilled from the grass, and vetiver oil, distilled from the dried root, belong to this important group. The most prominent oil among them is oil of citronella because of its very wide application in the scenting of soaps, insecticides, technical preparations and because it is a source of many valuable synthetic isolates.

History: The distillation of a volatile oil from "tanglat," which means either lemongrass or citronella grass, was first observed and recorded by the Jesuit Father, Juan Nierenberg, who visited the Philippine Islands in the seventeenth century. Hermann and Grimm, two army surgeons in Government service in Colombo, Ceylon, during the second half of the seventeenth century, both reported the distillation of citronella oil which was used mainly for medicinal purposes.

The first samples of small lots of "Oleum siree" arrived in Europe in the beginning of the eighteenth century but, according to the record of Rumphius, the oil seems to have been exported only very sporadically. Europe took first notice of oil of citronella and oil of lemongrass only in 1851 and 1855 when samples were displayed during the World's Expositions in London and Paris.

Gradually oil of citronella grew in favor and found ready buyers in Europe, large quantities of oil

CITRONELLA

by *Dr. Ernest Guenther*
Fritzsche Brothers, Inc.

being produced in Ceylon which remained practically the sole supplier until about 1890 when Java, too, started producing the oil. Since then there exist two distinct types of citronella oil, viz. Ceylon and Java oil, each having its special merits and finding its special application. The extensive research on the constitution of essential oils at the turn of the last century was accompanied by the development of many synthetic isolates and derivatives. The wide application of these products in the soap and perfume industries became a tremendous incentive to the production of oil of citronella which increased rapidly after 1900 and especially after the war of 1914-18, when new processes of manufacturing synthetic menthol from oil of citronella were developed.

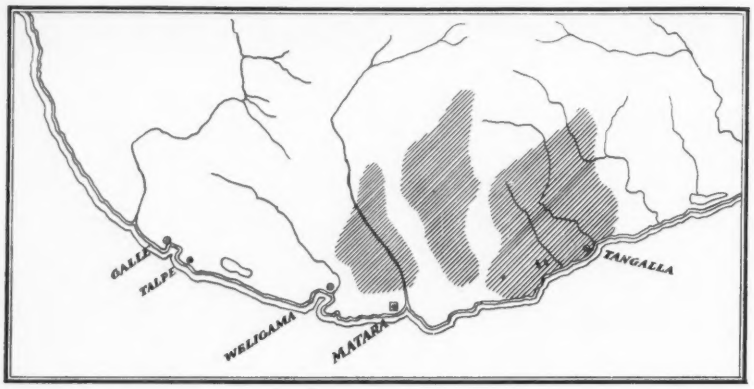
Botany: The botany of the *Cymbopogon* group has been rather confusing due to the careless application of the terms citronella and lemongrass which were often confounded. The parent plant of all citronella grasses is probably the mana grass, *Cymbopogon confertiflorus* Stapf., which grows wild in Ceylon. One classification lists all oil-bearing citronella grasses as *Andropogon Nardus* Rendle var. *genuinus* Hack. while according to another nomenclature the grasses are listed as *Cymbopogon.*

There exist two main types of planted citronella grass which can hardly be distinguished morphologically but which differ, nevertheless, in habitat and especially in regard to essential oil.

1. The grass named locally maha pengiri or maha pangiri, *Cymbopogon Winterianus* Jowitt (*Andropogon Nardus Java* de Jong). The designation "wintergrass" or "old citronella grass" came into use because years ago it was grown by Winter, a well known citronella oil distiller in Ceylon.

This grass is tall, requires fertile soil, much cultivating and more frequent replanting. It demands longer intervals between harvesting but gives a good yield of oil. The oil contains a high percentage of total geraniol (about 85 per cent) and is in general considered of superior quality. Java, with its rich, volcanic soil, grows maha pengiri grass in very large quantities; in fact, the Java citronella oil is distilled mainly from this type, while in Ceylon only very limited quantities are under cultivation. Guatemala and Formosa, too, have lately made serious efforts to grow this grass. According to J. F. Jowitt[1], maha pengiri grass also grows wild in Ceylon; this author[2] is inclined to believe that crossing with the wild mana grass resulted in the other important variety of culti-

Views of Ceylon citronella production. 1. Typical beach scene in Ceylon. 2. The citronella grass being cut by the use of sickles. 3. The grass is sun dried and transported to the distillery. 4 General exterior of a citronella distillery in Ceylon. 5. A close-up exterior view of a distillery. 6. Interior view of distillery showing still arrangement. 7. Stills are arranged in pairs, one being charged with grass while the other is operating.



Map of the south of Ceylon showing the important citronella producing regions.

vated lemongrass, the so-called "lenabatu."

2. Lenabatu or lanabatu, *Cymbopogon Nardus* Rendle, *lenabatu* (*Andropogon Nardus Ceylon* de Jong), is the grass which in Ceylon today is mainly used for distilling the Ceylon citronella oil. It is not grown anywhere else. This type of grass is hardy, does quite well even on poor soil, requires only little care and not much moisture. The plantations have a longer life span but the yield of oil is not as high as that of maha pengiri. The oil contains less total geraniol (55 to 60 per cent) and therefore the quality of the Ceylon oil in general is considered somewhat inferior to the Java oil.

Commercial Types of Citronella Oil: Thus, we find on the market today two distinct types of citronella oils, i.e., the so-called "Java citronella oil" and the so-called "Ceylon citronella oil." To summarize, the Java citronella oil is distilled mainly from maha pengiri and produced in very large quantities. Because of its very high total geraniol content, this oil is superior and used mainly for the manufacture of synthetic isolates such as geraniol, citronellol and their esters, citronellal, hydroxy-citronellal and especially synthetic menthol. Of course, it also finds application in the perfuming of soaps and other products. Use and production of this oil have increased tremendously during the last twenty years. In years past, the Java oil commanded higher prices on the market but because of the enormous increase in production, prices have fallen lately to the level of and sometimes even below the Ceylon oil prices. Let us add that the entire Java citronella oil industry, and in particular the quality of the outgoing shipments, is organized and controlled by the Java Government.

The Ceylon citronella oil, production of which started much earlier, is distilled mainly from lenabatu, but to a lesser extent also from maha pengiri grass. Because the two types of grass sometimes grow almost side by side in Ceylon, it is difficult to judge the proportions. Roughly estimating, they are about 25 per cent maha pengiri and 75 per cent lenabatu grass.

The Ceylon citronella oil differs from the Java oil in regard to odor and total geraniol content which is only 55 to 60 per cent. It represents a distinct type. Although less suitable for the manufacture of synthetic isolates, the Ceylon oil retains its place in our industry for the perfuming of soaps and all kinds of technical preparations such as insecticides, polishes and so forth.

The Ceylon Government exercises no control over the outgoing shipments of citronella oil, despite many efforts toward that end. It has been suggested in Ceylon that the plantations of maha pengiri grass be increased, even that lenabatu should be abandoned altogether, with a view toward producing in Ceylon an oil similar to the Java type. On the other hand, it is claimed that the Ceylon oil should not compete with the Java oil because the former is still employed and liked as a dis-

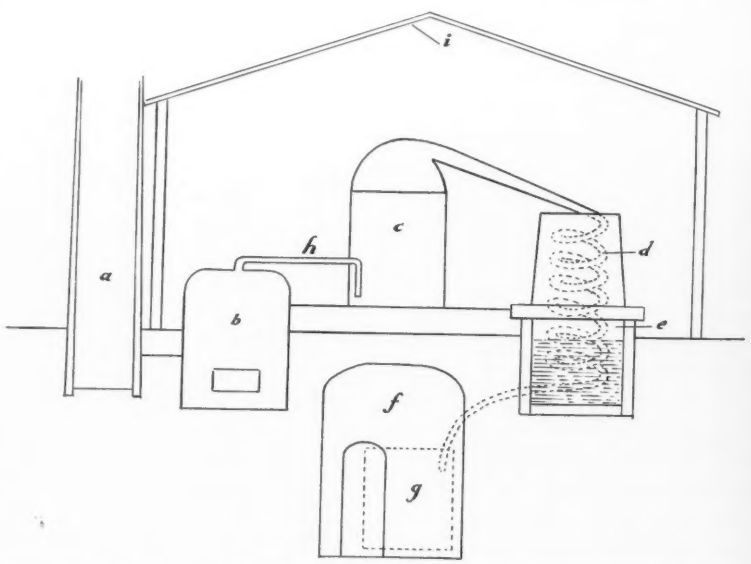


Diagram of a typical citronella still: a—chimney; b—steam boiler; c—two stills; d—condenser; e—condenser basin; f—enclosed room containing Florentine flask and oil containers; g—container for distillate; h—boiler feed pipe; i—protecting shed.

[1] *Annals of the Royal Botanic Gardens*, Peradeniya, Vol. IV, Part IV, Dec. 1908, 185.
[2] See also *Bull. Imp. Inst.* 10 (1912), 299.

Dr. Guenther, the author, photographed on a native boat on the beach at the Bay of Weligama in South Ceylon during his survey of citronella production there. All other photographs used in this article were taken by the author.

tinct type. Competing with the quality of the Java oil, the Ceylon oil would also have to vie with its price which, because of the tremendous quantities produced, can be held down at rather low levels. In fact, the poor soil of Ceylon, except for the more fertile regions in the high altitudes, may be quite unsuitable for cultivating maha pengiri. Because of overproduction and good quality, the Java oil has for years hung like a sword of Damocles over the Ceylon industry, and it has been advocated that instead of imitating the Java oil, the Ceylon producers should specialize in a distinct Ceylon oil of highest quality. Better cultivation of lenabatu, selection of certain strains, proper fertilizing and shading, etc., would undoubtedly increase the yield of oil per acre and improve the quality.

Ordinances have been introduced in the State Council of Ceylon to establish an experimental station solely for citronella research, in the Southern Province of Ceylon, with a rider that the Ministry of Agriculture and Lands be asked to consider the advisability of controlling the citronella oil industry of Ceylon. All these efforts, however, have thus far been in vain, partly because of the resistance by the producers and exporters and partly because of local political interference.

The most severe disadvantage under which the Ceylon citronella oil industry is suffering consists of the regular and almost universal practice of cutting this oil with a certain percentage of kerosene or petroleum. Although the trade seems to have become quite accustomed to this form of adulteration, many buyers abroad and exporters in Ceylon realize, nevertheless, that this handicaps their product in competing with the Java oil which stands above reproach in regard to quality because of efficient government control. Serious observers have always felt that this practice must be eliminated altogether before other efforts toward production of a superior quality and toward amelioration of the entire Ceylon citronella situation can bear any fruit. This nuisance still prevails, however, and we shall again refer to it.

In the following pages we shall describe the production of oil of citronella Ceylon, reserving the study of the Java oil for a future paper.

Producing Regions in Ceylon: The citronella producing regions are in the southwestern part of Ceylon, north of Galle and Matara, the two principal seaports on the southern shore of Ceylon. The citronella districts of Ceylon are slightly hilly and for most of the year these regions have very little rain. Of the growing areas, 70 to 80 per cent consist of rather poor soil. The total acreage under cultivation is today about 30,000 acres against 40,000 in 1911. Two main regions may be distinguished:

1. The larger and more important producing region stretching in the form of a large triangle

(*Turn to Page* 75)

A cooling basin of a citronella still, the water being used to cool the condensers.

SYNTHETIC FATTY A

(PART II)

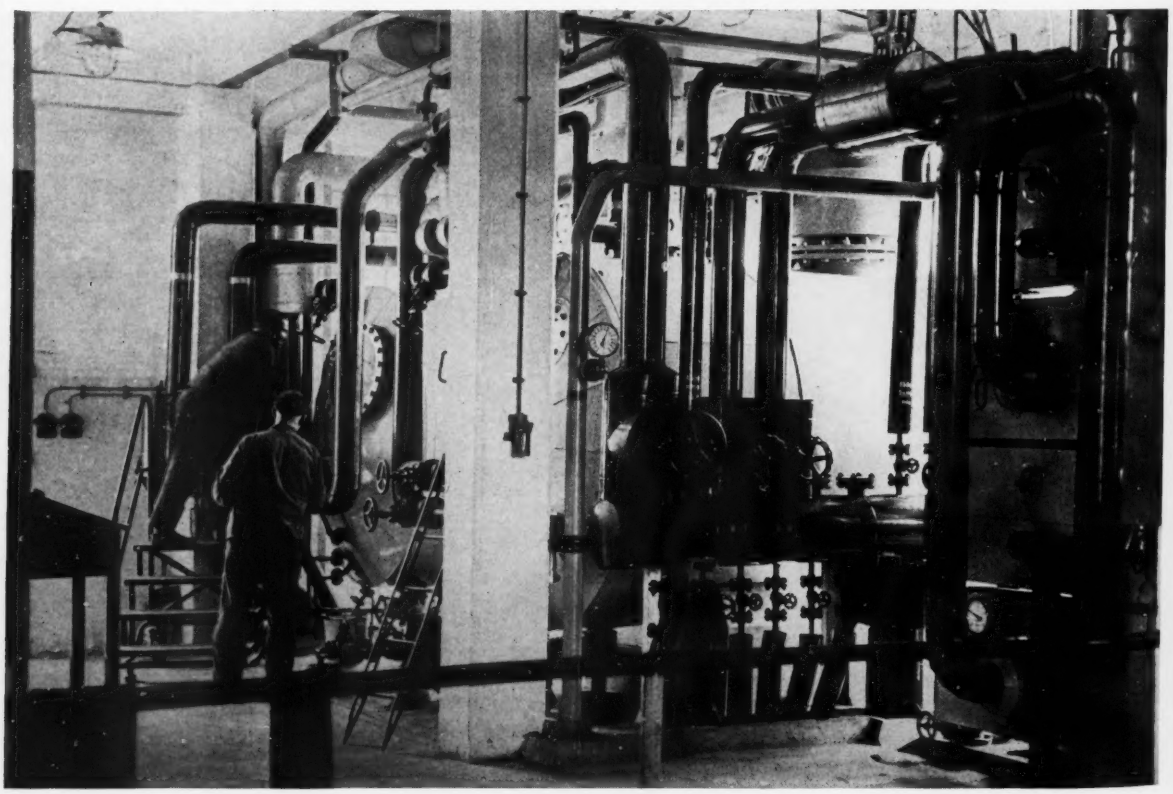
By Dr. F. Wittka

Zurich, Switzerland

FATTY acids formed by the oxidation of paraffins are obtained in an impure form mixed with unoxidized paraffins, unsaponifiable products of the oxidation, and other acid and neutral compounds including aldehydes, alcohols, ketones, oxy-aldehydes, oxy-ketones, esters and oxidized fatty acids. In order to effect a separation, the fatty acids are saponified and treated with water, which dissolves the soaps formed in the saponification process and separates them from the non-acid products by virtue of the insolubility of the latter in water.

It has been found that up to 80 per cent of the unsaponifiable matter can be separated out of the water solution upon standing. Thus the first operation in the separation of fatty acids consists in saponification with caustic soda or sodium carbonate. When caustic soda is used, this is carried out in open kettles equipped with heating and stirring devices. For saponification with sodium carbonate special apparatus is required, as shown in Fig. 5. This apparatus is designed for operation under pressure and is provided with an arrangement for recovery of carbon dioxide. A and B are tanks for the carbonate solution and for the oxidation paraffins. The saponification takes place in C and the separation occurs in E.

In operation, the saponification with sodium carbonate is carried out at about 80° C. After the evolution of carbon dioxide has ceased, the solution is heated at 120° C. for one hour and then allowed to stand in E until separation has taken place. When caustic soda is used, the saponification is carried out at 100° C. employing 38 Be. caustic and afterwards



Distillation Plant for the Recovery of Solvents used in Solvent Extraction of Unsaponifiable Matter.

ACIDS

diluting with water until a 50 per cent soap solution is reached. Sodium chloride is added to the mixture and it is allowed to separate. The remaining soap solution contains 16 or 17 per cent of unsaponifiable material.

The unsaponified matter from this separation is added to new paraffin before oxidation and is again subjected to the oxidation procedure. As mentioned above, the recycled products have a catalytic effect on the oxidation of new paraffins so that the time for oxidation is considerably shortened by the addition of these oxidized products.

By splitting the soap solution with acids, fatty acids are yielded which contain approximately 20 per cent unsaponified matter and small quantities of oxidized fatty acids and other impurities. These crude fatty acids must be purified to make them of a quality sufficiently high for soap-making, for if soaps were made from them at this point, they would be dark in color, have a disagreeable odor and become rancid very quickly.

4) *Purification of the fatty acids*:—Two methods for the purification of the saponified fatty acids

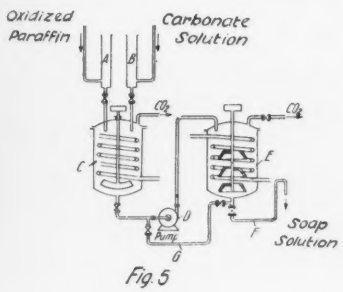
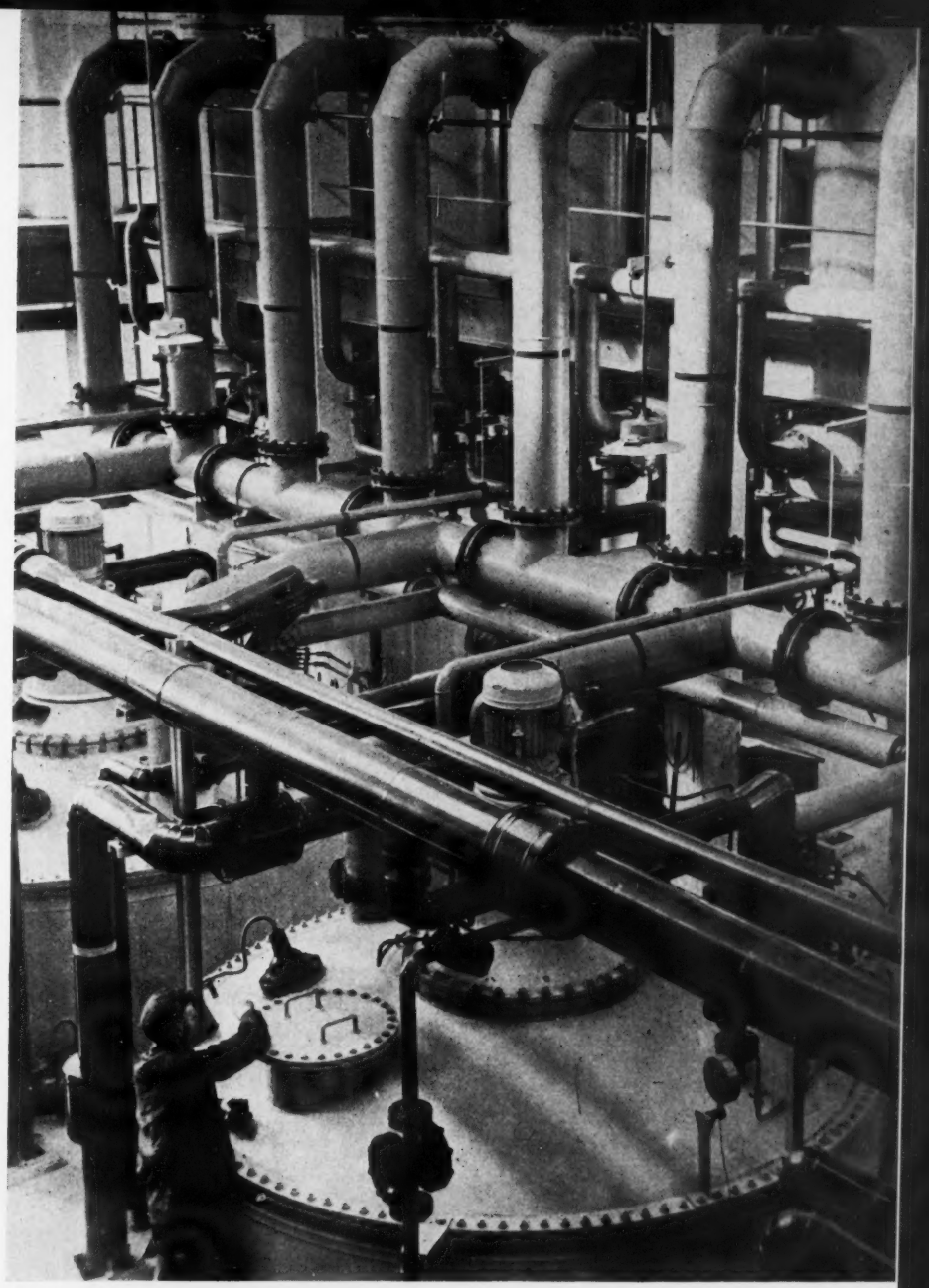


Fig. 5

Saponification of Oxidized Paraffin with Na_2CO_3. German Patent 561,421, 1929; J. G. Farben.



Extractors for the Removal of Saponified Fatty Acids from Unsaponifiable Material with Water.

are in common use at the present time. One consists in the extraction of the soap solution with solvents followed by a special treatment of the fatty acids obtained after extraction. The other method consists in a kind of steam distillation of the dry soaps. In both methods, a final distillation and fractionation of the fatty acids is necessary.

Solvent extraction method I. Naphtha is used as the solvent in the continuous process for the removal of the unsaponified materials. For inhibiting the formation of emulsions, the soap solutions are first mixed with an alcohol, such as ethyl or isopropyl alcohol. The solvent extraction apparatus is shown in Fig. 6. The soap solution is mixed in (1) with reclaimed alcohol from (5). After mixing and heating, the solution enters the top of tower (2) where it is contacted counter-currently with the solvent which is introduced at the bottom of the tower. Kettle (3) is for separation of the extracted soap solution by density differences and the separation is completed in (4) by steam distilling. The extracted soap solution

free of solvent and alcohol is treated in (6) with mineral acid to produce fatty acids. The solvent solution is freed from alcohol and unsaponifiable matter in (7) and (10) and the alcohol and solvent are used over again.

A special apparatus for eliminating the last traces of alcohol and solvent from the extracted soap solution is used. The extracted soap solution is heated in a coil and sprayed into a chamber filled with Raschig rings. Steam is blown in removing the last traces of solvent and alcohol while the purified soap solution is collected and drawn off.

Solvent extraction method II. Another type of continuous solvent extraction plant is shown in Fig. 7. The soap solution comes from tank A, passes through pump C and preheater E and enters the extraction chamber J. The solvent comes from tank B, passes through pump D and preheater F, entering the chamber at H. Passing downward counter-currently to the solvent, the soap solution is collected in N from which it is sent to the acid treatment. The solvent passes upward, is collected in M and then recycled. By this process, the soap solution is freed from all neutral oxidation products and from unreacted paraffins. Oxidized fatty acids and other acid products, however are not removed and remain as impurities. These must be removed to insure satisfactory results in the final product. Heating at a high temperature is the best method of destroying the undesirable impurities.

Under these conditions, oxidized fatty acids lose water to form unsaturated fatty acids while the other acid products are cracked to form

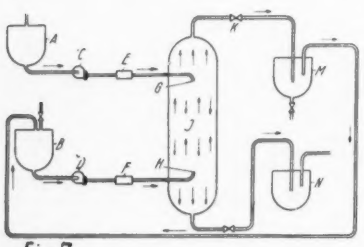


Fig. 7

Continuous Extraction Plant. French Patent 824,756, 1937; Henkel & Co.

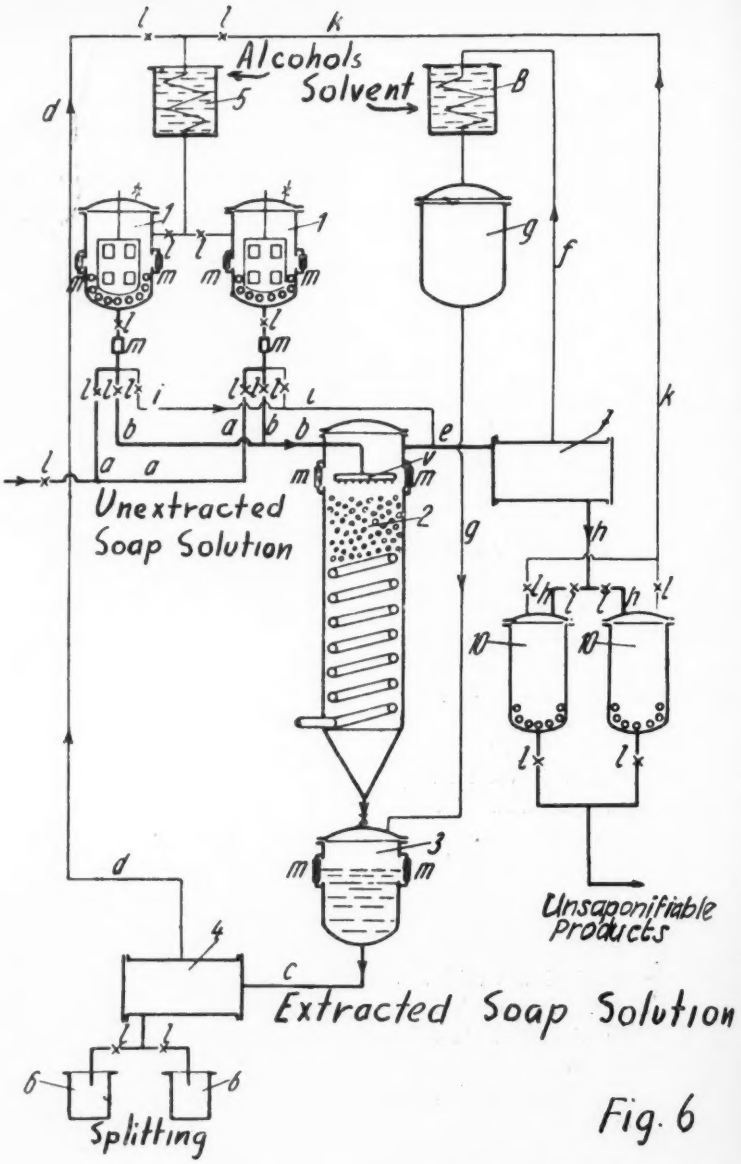


Fig. 6

Solvent Extraction Plant. German Patent 538,374, 1930; J. G. Farben.

fatty acids and small quantities of neutral products. As soaps made from these fatty acids are somewhat dark, it is necessary to split the treated soaps into fatty acids and make a fractional distillation. This distillation yields odorless, light colored fatty acids which can be used to make soaps of high quality.

These two solvent extraction processes both require two treatments for the production of usable fatty acids, one for removing unsaponifiable substances, and one for improving the qualities of the raw fatty acids. The other method of purification accomplishes both changes in a single treatment.

High temperature and pressure method. Although this method

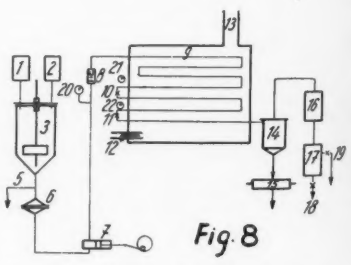


Fig. 8

Distillation Plant for Removing Unsapcnifiable Matter from Soaps. British Patent 487,317, 1936; J. G. Farben.

of producing fatty acids from the saponified products of the partial oxidation of synthetic paraffins is chemically and physically simpler than the other methods, more expensive equipment is required. The process consists in heating the soap solution at a high temperature under high pressure and dispersing the hot soap solution without allowing the temperature to fall. Under these conditions, the oxidized fatty acids are dehydrated to form unsaturated fatty acids and the acid products are changed into neutral products. The soap remains as a yellow liquid which when cooled over rollers gives an odorless yellow powder. Only approximately 0.1 per cent of unsaponifiable matter is left in the final soap and this small quantity can be removed by extracting with acetone. The heating and expanding of the hot soap solution can be made in either one or two steps. Each type requires a special apparatus.

Fig. 8 is a flow plan of the single heating and expanding type of process. (1) and (2) are the tanks for oxidized paraffins and caustic solutions; (3) is the saponification kettle; at (5) the major portion of the unsaponifiable matter is removed. The soap solution passes through filter (6), pump (7), reduction valve (8) and enters the heating chamber (9). The furnace is heated by gas burners (12). Circulating through the bank of tubes in the furnace the temperature of the soap solution is raised to 300° C. and the pressure to approximately 300 atmospheres. Reduction valves (10) and (11) diminish the pressure as the soap solution passes through the furnace. In expansion chamber (14) the pressure is suddenly reduced to one atmosphere and as the temperature is kept at 300° C., the unsaponifiable substances are distilled and condensed in (16) and (17). The remaining molten soap is cooled over rollers (15).

In another type plant, the expansion occurs in two stages, the first from 150 Atm. to 50 Atm. and the second from 50 Atm. to 1 Atm. One extraction with acetone is sufficient for freeing the soap powder from unsaponifiable matter which is present in small amounts—usually from 0.5 per cent to 1 per cent.

As fractional distillation is made subsequently, this extraction with acetone is not always necessary for making soaps of a good quality. Fatty acids made by this method are soft and white and yield colorless, odorless soaps which do not become rancid.

The oxidation of paraffins and the saponification separation of the fatty acids are, at this time, essentially batch operations while the raffination and purification processes are continuous. Proposals to couple the batch and continuous operations into one performance have been suggested but none is in use at the present time.

Fatty acids synthesized from the Fischer-Gatsch paraffins have the following constants:[15]

Acid value = 261.8
Iodine value = 7.0
Oxidized fatty acids = 0.2%
Average molecular weight = approx. 214 ($C_{13}H_{26}O_2$)

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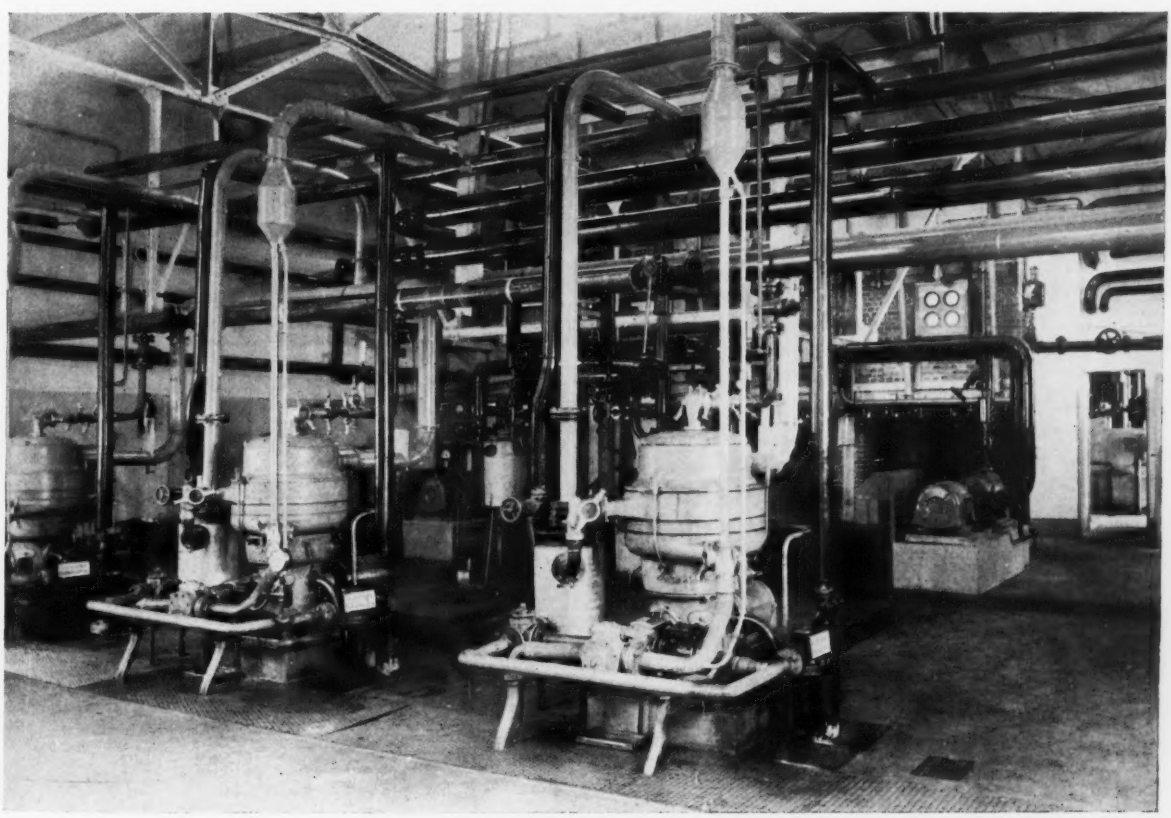
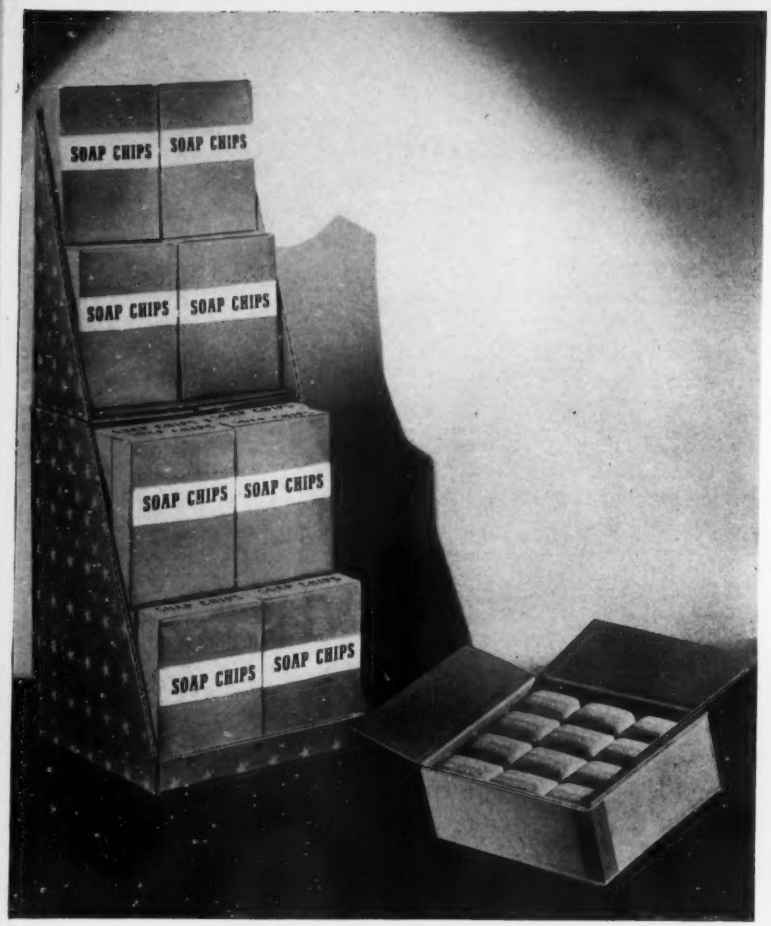
Inside of Distillation Plant for the separation of Nonsaponifiable Matter from Soap.

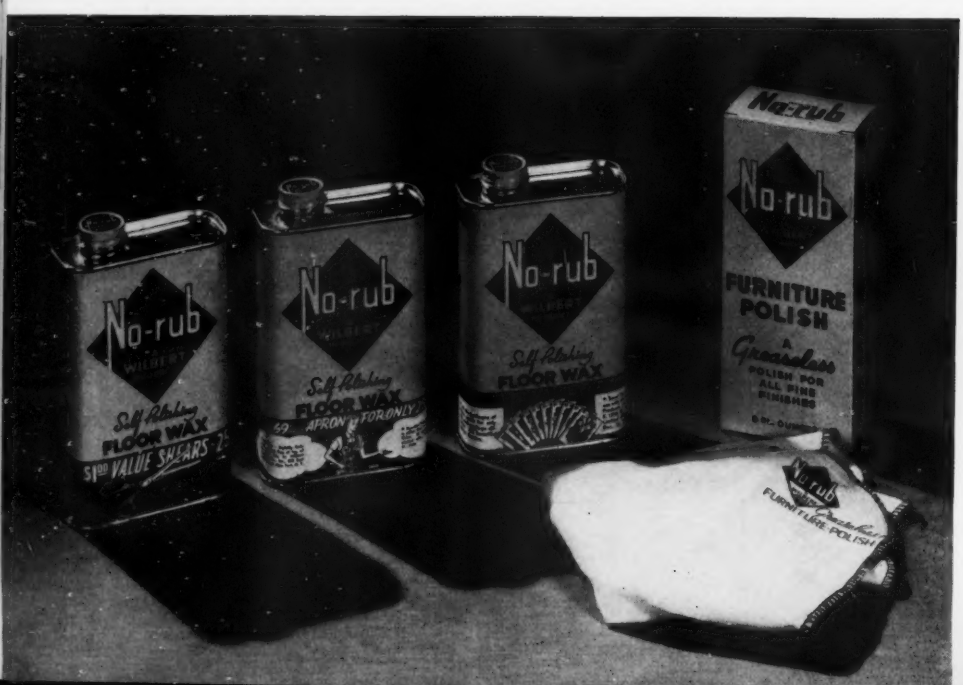


New Products and



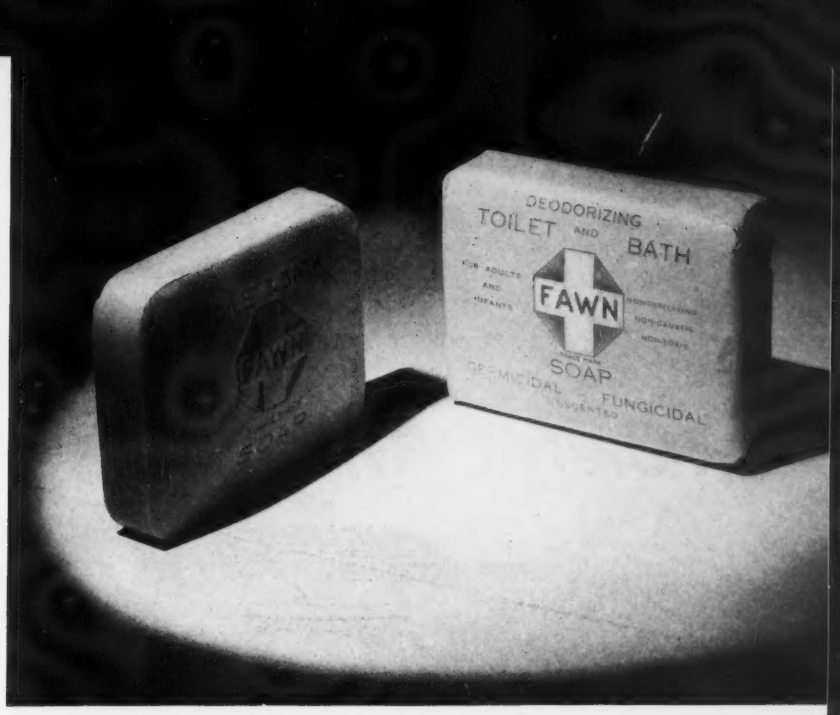
"Colorgated," a new corrugated board upon which patterns and finishes may be printed directly is being offered for the packaging and display of soaps and cleaning materials by United Container, Philadelphia.

New gift packages have just been announced by Shulton, Inc. for the approaching Christmas gift season. The package illustrated, including a guest size cake of soap, tubes of talcum and bath salts, sells for $1.00.



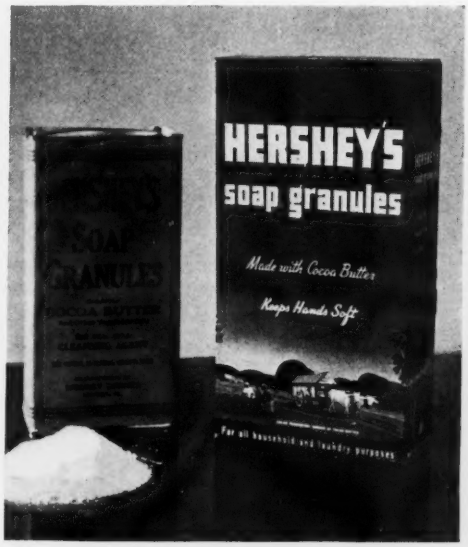
Packages for the "No-Rub" line of waxes and polishes of Wilbert Products Co., Brooklyn, serve as miniature billboard to publicize the Wilbert premium line. Labels calling attention to the premiums are pasted round the bottom of the "No-Rub" containers.

Packages



"Fawn" soap, a new product said to represent the first successful incorporation of chlorine in soap, has just been put on the market in Philadelphia, Reading and Washington by the originator, T. F. Smith of Philadelphia. To be a 25c seller, the introductory offer is two cakes for that price.

A new container for "Hershey's Soap Granules" has just been designed by McKee & Albright, Philadelphia. It is a cardboard carton employing four color process printing. Sampling of the new package is now proceeding in Pennsylvania.



R. L. Watkins Co., New York, have recently adopted a new oval bottle for their well-known shampoo. The cross-bar design provides a surer grip. A yellow molded cap tops off the package. By Phoenix Hermetic.

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RIDGEFIELD· N. J.

News....

Revamp Prouty-Bowler Plant

The plant of the Prouty-Bowler Soap Co., Des Moines, Iowa, is being remodeled, according to advices from that city, and equipment is being installed for a new non-kettle rapid process for the manufacture of granulated soaps for the household market and the laundry trade. This is the second revamping and expansion of the plant since the beginning of 1939, the factory having been enlarged a year ago. C. R. Prouty is president of the company and George R. Shawhan is secretary-treasurer. The firm celebrated the fiftieth anniversary of its founding last year.

British Soap Still Unrationed

Soap products still remain unrationed in Great Britain after almost a year of war. A system of rationing may soon have to be put into operation, however, says *Soap's* London correspondent. Since the outbreak of war the distribution of fats and raw materials to manufacturers have been controlled, and as a result many retailers are suffering from a shortage of supplies. Manufacturers point out that some retailers are short of soap because many makers, due to the control on raw materials, have recently had to adopt a voluntary system of rationing their customers.

More laundry soap is now being sold retail than before the war, due to the fact that many women who formerly sent their washing to laundries are doing it themselves as a war-time economy. In addition, the capitulation of France has resulted in a cessation of imports of luxury toilet soaps from that country.

Hayman C-P-P N. Y. Sales Mgr.

W. E. Hayman, for fourteen years Philadelphia district manager of the soap sales department of Colgate-Palmolive-Peet Co., Jersey City, has recently been named New York district manager of soap sales. Mr. Hayman comes to New York with a background of twenty years of man-

W. E. Hayman

agerial experience in the department in the Baltimore, Buffalo and Philadelphia areas. He replaces W. King, who has left the company.

Distribute "Velso" Line

Carter, Rice & Co., San Francisco, has recently become distributing agents in the Western states for the Velso line of disposable soap tissues, manufactured by Velso Products Co., Ottumwa, Iowa. Velso tissues, bleached sulfite toweling which has been impregnated with soap, are made for use in public washrooms to replace bar soap or soap dispensers.

Shulton Opens Texas Office

Shulton, Inc., New York, recently opened a branch office in Dallas, under the management of H. H. Waters. Other Shulton branch offices are located in Chicago and Los Angeles.

Edward Hatterschide Dies

Edward Hatterschide, chemical engineer for Procter & Gamble, Cincinnati, for over twenty years died recently. His widow, three sons, a brother and two sisters survive him.

Gillam Soap Works Expands

Gillam Soap Works, Fort Worth, Texas, has recently engaged in a large plant expansion, including the installation of new crushers, filter presses, grinders, three new boiling kettles and the construction of a new two-story structure and a warehouse. The capacity of the plant has been increased 200 per cent over the recent four-month period, according to E. O. Gillam, manager.

Census Shows Soap Sales Gain

Sales of soap during the second quarter of 1940 were 9.4 per cent over the average quarterly sales for the five years, 1935 to 1939, inclusive, according to figures just released by the Association of American Soap & Glycerine Producers in its quarterly soap census tabulations. Soap deliveries for the second quarter of 1940 amounted to 650,712,865 pounds, valued at $65,230,200, as compared with 649,124,452 pounds, valued at $64,052,911, for the second quarter of 1939. Sales were lower, however, than the first quarter of 1940 when deliveries amounted to 682,221,044 pounds, valued at $68,449,865.

College Offers Soap Courses

The College of Arts and Sciences, Los Angeles University of Applied Education, recently reorganized in California, now offers courses in soaps and detergents; oils, fats and waxes; insecticides, parasiticides and germicides; and industrial pharmaceuticals, among other courses leading to a degree of Bachelor of Science in Industrial Chemistry. This is the first year that standard four-year university courses in these subjects have been offered. The college also gives certificated courses in the chemistry of cosmetics, soaps and perfumes, including theory and laboratory practice in manufacture, compounding, merchandising and use.

Sample Hershey Soap Granules

Over 300,000 nine-ounce packages of "Hershey's Soap Granules" are being sampled by the Reuben H. Donnelly Corp. in the Philadelphia area. When the Philadelphia sampling is completed 210,000 samples will introduce the re-designed Hershey package to Wilmington, Del. residents and other selected cities in Pennsylvania. McKee & Albright Co., Philadelphia agency re-designed the Hershey package and are handling the introductory sampling. In each nine-ounce package is a coupon good at the grocer's for six bars of Hershey's toilet soap. Thus Hershey is gaining acceptance for two products on one sampling campaign."

Soap in the Movies

Colgate - Palmolive - Peet Co. has joined the rapidly lengthening list of industrial concerns using motion pictures for advertising purposes. A Colorado Springs producer, specializing in promotional movies, has announced completion of a film for C-P-P- Co. intended for circulation throughout South America on behalf of "Palmolive" soap. The accompanying voice message is in Spanish. For Lever Bros. Co. the same film producer recently made movies promoting "Rinso" and for Procter & Gamble another picture was announced with "Dreft" as the star of the drama.

Victor Sponsors Display

Victor Chemical Works has presented to the Chicago Museum of Science and Industry an exhibit which graphically portrays the part phosphorus plays in sanitation and for other everyday purposes. Chief feature of the display is a miniature model, thirty feet long, showing the company's Nashville, Tenn., plant for producing phosphorus and phosphoric acid. The visitor, with the help of explanatory placards, can follow the raw ore from blast furnace to the acid storage tanks, and thence to use in finished consumer products. Among products shown are household cleaners, detergents, water softeners, soap builders, dishwashing compounds, industrial cleaners, insecticide penetrants and other commodities. Special attention is directed to trisodium phosphate in an exhibit which consists of two glass jars, one of which holds hard water and soap, the other hard water, soap and T.S.P. Plungers, moving up and down in the liquids, demonstrate the efficiency of T.S.P. as a water softener and emulsifying agent.

Laundering Sans Soap

Probably the most unusual laundry in Great Britain is one at Uxbridge, where water only is used without supplies of any kind. The machines consist of a number of large vats sunk in the floor, through which pass 500,000 gallons of water per hour at a pressure of about 120 pounds per square inch. Not all types of material can be successfully handled by this novel method, but blankets, carpets, mackintoshes, etc., are washed very efficiently. Blankets represent a large proportion of the laundry's work. The finish achieved without tumbling or carding is reported to be quite remarkable. *Laundry & Dry Cleaning J. of Canada, July*, 1940.

Propose Material Standards

Proposed standards for mineral oil, petrolatum and paraffin have just been tentatively adopted by the board of standards of the Toilet Goods Association, New York. These standards are now being submitted to all known suppliers of these materials for criticism and suggestions. It is expected that the suggestions of the suppliers will enable the committee to establish the final T. G. A. Standards for these materials in the near future. The work is being supervised by S. L. Mayham, director of the T. G. A. Board of Standards.

Form Schanach, Inc.

John Schanzenbach, formerly of J. Schanzenbach & Co., toiletries, and M. Leopold, have recently formed Schanach, Inc., cosmetic specialties and raw materials. The company will import and distribute castile soap, according to an announcement made by M. Leopold, secretary and treasurer. Offices are in New York.

Chicago Associations Golf

The August tournament of the Golf Auxiliary of the Chicago Drug and Chemical and Chicago Perfumery, Soap and Extract Associations was held at Calumet Country Club on the 13th. Prizes were won by the following: Class A—1st, H. F. Woulfe; 2nd, E. F. Smith; 3rd, T. Sayers; 4th, H. K. Young; Class B—1st, S. M. Lind; 2nd, A. F. Frantz; 3rd, Walter Johnson; 4th, C. Leonard; Class C—1st, F. A. Degener; 2nd, E. L. Drach; 3rd, J. Gauer; 4th, T. C. Jesdale. Guest prizes were won by George Becker, W. A. Rotherman, Don Glenister and R. Carlson. The next meeting will be the annual inter city tournament with the Allied Drug and Cosmetic Association of Detroit and is scheduled for September 13th at Olympia Fields C. C.

P. & G. Employees Celebrate

Cincinnati employees of Procter & Gamble and their families celebrated the 106th semi-annual distribution of profit-sharing dividends at Coney Island, near Cincinnati, August 3. More than 10,000 persons participated in the day's festivities, which included field and water events and cash prizes for the winners. Many made the trip by boat on the Ohio River. Dividend distribution amounted to $214,000, as against $155,000 for the corresponding period last year. The total for all plants and offices for the six-month period was $505,000, an increase of 15 per cent over last year. Fred A. Brown, superintendent of the company's Ivorydale plant, was chairman of the committee of arrangements; assisting him were I. J. Berni, W. W. Blaesi, H. S. Brutton, C. W. Crook, T. S. Eagan, C. J. Fahnle, P. K. Honey, S. P. McCalmont, R. Oliver, J. E. Pruden, J. Robinson, W. L. Romney, W. M. Ramsey, T. H. Thompson and W. H. Tuttle.

Wilson Heads C-C-P in Detroit

R. L. Wilson of Cincinnati has recently been named manager of the soap department of the Detroit branch of Colgate-Palmolive-Peet Co. He succeeds Jack Hillman, who has been transferred to Chicago.

Order Union Disestablishment

A proposed order to break up the independent Soap & Cosmetic Workers Union, Inc., of Andrew Jergens Co., Burbank, California, was recently issued by the National Labor Relations Board. The order would also require the company to cease discouraging membership in the Soap & Cosmetic Workers Union (American Federation of Labor), or alleged "interference" in any other manner with the rights of its employees to engage in union activities. The NLRB stated that the Jergens Company had discriminated against union adherents, and required the company to reinstate 12 employees with back pay and to award back pay to 16 other workers who had already been reinstated. Although the Board found that the company had not discriminated against seven other union members, it required the company to put them on a preferential hiring list.

Reports on C-P-P Foreign Trade

Foreign business of Colgate-Palmolive-Peet Co. has suffered comparatively slightly as a result of the war in Europe, according to a recent statement by E. H. Little, C-P-P president. Although his firm operates plants in all leading European countries, Mr. Little said the only one to be written off as a total loss was the unit in Poland. He added that the company's plant in France, located near Paris, is closed, but was not damaged in the war. The Belgian unit, likewise, has suspended operations, but is not believed to have been seriously damaged. Mr. Little said the company's factories in Italy, Germany and England were all operating on satisfactory schedules and showing a profit.

"Our English plants in Manchester and London are having little trouble in getting raw materials," he said, "although the supply of packing boxes has run low and our products sometimes have to be shipped in used boxes which originally contained competitive products. The company's plants in Hamburg, Germany, and Genoa, Italy, are both showing profits but, as profits cannot be taken out of these countries, they are invested in expansion. A third of our total profits last year was in our foreign markets. However, if we can show one-fourth that much profit this year, we'll be satisfied."

"As for the company's business in the United States," he continued, "it is ahead of that of last year. Total business done by the company in 1939 aggregated $100,000,000."

Authorize Stock Issue

Morton Chemical Co., Greensboro, N. Y., maker of detergents and chemicals for the textile industry, has recently been authorized to issue an additional $100,000 preferred stock, $25,000 of which has been subscribed and paid for and the balance to be issued as desired. This increase in working capital will permit further expansion in the manufacturing facilities of the plant and it is planned that the company will go into manufacture of materials for trades other than textiles. The company has recently opened a branch office in Greenville, S. C., under the management of Robert E. Buck.

Sponsors Radio Program

Los Angeles Soap Co., Los Angeles, is currently sponsoring a radio program advertising its "White King" granulated soap and "Sierra Pine" toilet soap. The new program is Knox Manning's "News at Noon," which is broadcast on a five-station Columbia Pacific network through Raymond R. Morgan Co. The contract is for twenty-six weeks.

Present Mercer Awards

Awards given each year by Col. A. L. Mercer, president of Cowles Detergent Co., Cleveland, representing approximately a semester's scholarship in Oberlin College, Oberlin, Ohio, were recently granted to Oberlin students writing the best essays on some economic subject. The senior award was made to Richard Hirshberg for an essay on "Corporate Reorganization and the Chandler Act." The junior award went to Virginia Cole whose essay was on the subject of "The Danube Dilemma."

Forbid "Aid-Conditioning" Soap

Air Conditioning Textiles, Inc., New York, has recently been ordered by the Federal Trade Commission to desist from misleading representations in the sale and distribution of a soap designated as "Air Conditioning the Human Body" soap and as "Air Conditioning" soap. The company was ordered to stop using the term, "air conditioning" or "air conditioning the human body" or any similar term to describe its soap, representing that its soap reduces body temperature, reduces humidity or eliminates perspiration objections, or representing that the human body breathes through the pores of the skin.

Tin Use Banned in Britain

The use of tin containers for shaving soap, soap powder and domestic cleaning preparations has been banned by the British Minister of Supply as soon as present stocks in hands of wholesalers are exhausted. The new restrictions will conserve 40,000 to 50,000 tons of tinplate and sheet metal annually for munitions use. Cartons made of waxed paper and moulded containers will be widely used in the future to replace tinplate. Pottery is also finding increased use in Great Britain for packaging toilet preparations.

Chem. Salesmen Golf Winners

The Salesmen's Association of the American Chemical Industry met at Bonnie Briar Country Club, Larchmont, N. Y., August 20, for a day of golf. Winners were as follows: low net class A,—Charles Alexander, Seldner & Enequist; low net class B,—E. J. Boehm, National Aniline Works; members kickers.—D. L. Prior, Prior Chemical Corp.; second low net class A,—S. C. Moody, Calco Chemical Co.; second low net class B,—Ray Giebel, Harshaw Chemical Works; members kickers.—C. W. Frost, Prior Chemical Corp.; guests low net.—J. B. Eakins, J. S. & W. R. Eakins; guest kickers.—R. H. McCahan; members low gross.—Paul A. Dunkel, Paul A. Dunkel Co.; members kickers.—C. H. Slater, J. T. Baker Chemical Co.

WE MAKE IT CLEAR

Warner Caustic Soda has made it clear to many prominent users that paying a price premium for caustic soda is an unnecessary production expense.

Warner Textile Grade Caustic Soda has no turbidity. Its salt content is low. Its iron content is as low, or lower, than any caustic soda made by any method.

Warner Caustic Soda is furnished in standard 50% and 70% concentrations – as well as in 73% concentration shipped in specially lined tank cars. Also flake or solid. Why not order a car for prompt shipment?

WARNER CAUSTIC SODA

Tetra Sodium Pyrophosphate
Acid Sodium Pyrophosphate
Phosphoric Acid
Sodium Phosphates
Liquid Caustic Potash
Chlorine, Liquid
Sulfur Chloride
Trichlorethylene
Barium Carbonate
Perchlorethylene
Carbon Bisulfide
Sodium Sulfide
Bromine
Blanc Fixe
Carbon Tetrachloride
Epsom Salt
Hydrogen Peroxide
Alumina Hydrate, Light
Chemical Grade Magnesia

CHEMICAL WARNER COMPANY

DIVISION OF
WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

P & G Reports Record Earnings

Procter & Gamble Company, Cincinnati, in its annual report for the fiscal year ended June 30, showed the largest earnings in its 103-year history, the net figures being $28,628,493, exclusive of undistributed earnings of Canadian and English subsidiaries; this is equivalent to $4.37 a share on common stock, after preferred dividends. The preceding fiscal year showed $25,399,792, equal to $3.84 a share on the common, including foreign earnings. President R. R. Deupree said that business of Canadian and English units had been good, but that earnings had been limited by heavy war taxes there. Fourth quarter earnings stood at $6,355,345, compared with $6,930,753 in the June 1939 quarter.

The European war up to June 30, Mr. Dupree said, "has had little direct effect upon our American business, other than the bearing which it may have had upon prices of raw materials and the very natural uneasiness which it may have caused in the minds of dealers. Conditions in Cuba and the Philippines, where plants are located, have not changed materially."

Theodore Weicker Dead

Theodore Weicker, chairman of the board of E. R. Squibb & Sons, Brooklyn, died recently at his home in Greenwich, Conn. He was eighty years old. Born in Dormstadt, Germany, Mr. Weicker as a very young man went to London where he worked for an export house until coming to the United States in 1887 to head the New York branch of Merck & Co. In 1905, following the death of Dr. E. R. Squibb, Mr. Weicker joined with the late Lowell M. Palmer to take over the Squibb firm and during subsequent years built it up to its present position.

Quaker Builds New Laboratory

Quaker Chemical Products Corp., Conshohocken, Pa., has recently begun construction of a new laboratory for research and development work. The laboratory, in which fifteen research chemists will work, was designed and is being constructed by Frank R. Heavner. It is expected it will be ready for occupancy by October 1. The old Quaker laboratory will continue to be used for plant and control work.

A first prize winner in the recent Shulton Father's Day Contest on Early American Old Spice Toiletries was this window display in the department store class. It was shown in the store of J. M. Adams & Co., Buffalo.

P. & G. Dist. Sales Mgr. Dies

Beecher T. Adams, district sales manager for Procter & Gamble in Huntington, W. Va., died early in August. He is survived by his widow, mother, son and two brothers.

Stiefel Soap Correction

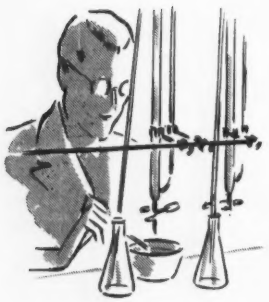
A report that the Stiefel Medicinal Soap Co., Preston Hollow, N. Y., was cited by the Federal Trade Commission for false representation in connection with the sale of Stiefel's Medicinal Soap, was published on page 45 of the June, 1940, issue of *Soap & Sanitary Chemicals*. A communication was received on Aug. 19 from H. Goslar Carstens of New York who states that he is the only accredited agent in the United States for Stiefel's Soaps and that this action of the F.T.C. grew out of unfair competition against his firm. The letter states:

"You fail to state that H. Goslar Carstens, 30 East 20th Street, New York, N. Y., is the only accredited firm in U. S. to sell Stiefel Soaps and that the Stiefel Medicinal Soap Co. has not been authorized to use the name "Stiefel" in connection with the sale of soaps, and that furthermore we are the only authorized firm to sell Stiefel Medicinal Soaps in the U. S. The pending action by the Federal Trade Commission against the Stiefel Medicinal Soap Co. is relative to the alleged unfair competition directed against my firm."

Stiefel's Medicinal Soaps are manufactured by J. D. Stiefel, Offenbach - on - the - Main, Germany, and some 25 varieties have been sold in the United States for many years.

Luxor Receives FTC Order

Luxor, Ltd., Chicago, manufacturer of toilet articles, has recently been ordered by the Federal Trade Commission to discontinue violations of the Robinson-Patman Act in the sale of certain of its products. The Luxor company, according to Commission findings, furnished some of its most popular cosmetics in "junior" or ten cent size packaging to novelty, syndicate and five and ten cent stores and refused to supply the small size packages to competing purchasers such as retail druggists. The "junior" packaging is preferred by many customers, the Commission found, yet



COMPARATIVE WASHING TESTS WITH ORDINARY SOAP BUILDERS CONFIRM THE SUPERIOR EFFECTIVENESS OF VICTOR TETRA SODIUM PYROPHOSPHATE

DETERGENT LABORATORY REPORT

WASHING TEST

CONCENTRATION 0.35% TEMPERATURE 140° F HARDNESS 400 ppm TIME 30 Min. AGITATION Regular

100% Soap	70% Soap 30% Soda ash	70% Soap 30% T.S.P.	70% Soap 30% 40° Silicate	70% Soap 15% Soda ash 15% T.S.P.P.
SUDS Trace	SUDS None	SUDS Trace	SUDS None	SUDS 1-1/2"
pH 8.9	pH 9.9	pH 9.4	pH 9.1	pH 9.6

DISCUSSION: Soil No. 10

THE improved washing effect that results from the use of tetra sodium pyrophosphate as compared with ordinary soap builders is strikingly demonstrated in the above test. Washing was done in water having a natural hardness of 400 ppm. The concentration of the soap mixture used was 0.35%; the temperature, 140°F. The cloth washed in the presence of Victor Tetra Sodium Pyrophosphate is unmistakably cleaner . . . yet no more soap was added than with the ordinary builders. May we send you a liberal sample for conducting your own tests?

VICTOR CHEMICAL WORKS, 141 W. Jackson Blvd., Chicago

VICTOR

HEADQUARTERS FOR... pHosphates

the retail druggists endeavoring to obtain the "junior" size could get only the larger size. The Commission order directs Luxor to cease furnishing any of its products packaged in containers of a certain size and style unless all purchasers competing in the resale of such articles are given the opportunity of obtaining containers of like size and style on proportionally equal terms.

C. P. P. Dividends Down

Excluding results of English and Continental European subsidiaries, Colgate-Palmolive-Peet Co., Jersey City, showed a profit of $1,278,230, equal to 45 cents a common share, for the first half of 1940. The total contrasts with earnings of $2,427,098, or 88 cents a common share, in the first six months of 1939, when results of English and Continental units were included. All dividends from European subsidiaries have been credited to a reserve for possible loss on investments, according to E. H. Little, president. This reserve on June 30 amounted to $1,164,591.

Offer New Fixative

Sparhawk Co., Sparkill, N. Y., has recently developed a new perfume fixative which it is offering under the name "Petra." It is colorless and does not discolor other materials in which it is incorporated. It is said to be readily soluble in alcohol and benzyl benzoate, and its odor very persistent even after repeated washing.

"Wonder Glo" Stipulation

Werner Walter, trading as Wonder Products Co., Canton, Ohio, has recently entered into an agreement with the Federal Trade Commission to discontinue representing that his cleaner and water softener, known as "Wonder Glo," is manufactured by himself; contains no caustic soda or lye; is a most excellent germ destroyer or antiseptic; will eliminate the necessity of rubbing clothes when used in a tub of wash, or has any particular value as a shampoo other than to soften hard water.

Oil Chemists Meet Oct. 2

The American Oil Chemists' Society will hold its annual fall meeting at the Stevens Hotel, Chicago, on October 2, 3, and 4. The program will comprise a series of papers and reports on oils, fats, soaps and related products. A feature of the meeting as in previous years will be a series of exhibits and booths of equipment, laboratory supplies, etc. On one evening during the meeting, a smoker will be held and on another, a banquet with entertainment. Several tours in and about Chicago are also being arranged. John P. Harris of Industrial Chemical Sales Division, West Virginia Pulp & Paper, Chicago, is in charge of arrangements and Dr. R. C. Newton of Swift & Co., Chicago, is directing the scientific program.

Soap Aids Influenza War

The addition of soap to vaccines used in the prevention of influenza is a new technique recently developed by Drs. Thomas Francis, Jr., and C. Chester Stock of New York University's College of Medicine, as the climax of a series of previous researches by other scientists. In experiments on mice, it was found that when a specially prepared soap solution is mixed with influenza virus, a new kind of vaccine, "antigen," is produced. The virus thus treated can no longer grow and cause the disease but it retains the power of building up resistance to influenza. Vaccinated with soap-treated virus, the animals resisted infection when fully active virus was instilled into them.

Soaps that made the virus harmless consisted of molecules in which there were 18 carbon atoms, it was found, and the most effective soaps were those made from oleic acid. Just how the oleic acid soap renders the influenza virus inactive without altering it too much, is still incompletely understood.

No Tin Shortage Expected

American producers of tin plate foresee no shortage of tin in the United States in spite of recent events in the Far East, whence come a substantial part of American tin imports, according to a bulletin just released by American Iron and Steel Institute. The United States as a great market for tin is not likely to be overlooked by those who have it to sell, it is predicted, even if the Netherlands East Indies and French-Indo-China were to pass out of the control of the nations to which they now belong. Meanwhile the United States government is going ahead with its plans for purchasing 75,000 tons of tin as a national reserve.

Open Phosphoric Acid Plant

A. R. Maas Chemical Co., Los Angeles, has recently opened a new plant at South Gate, Calif., for the direct production of phosphoric acid from phosphorous. Production is said to be 58,000 pounds of 75 per cent phosphoric acid per day. A large percentage of the output will be used by the Maas company for the manufacture of trisodium phosphate and tetra sodium pyrophosphate. A new pyrophosphate plant was put into operation earlier this year.

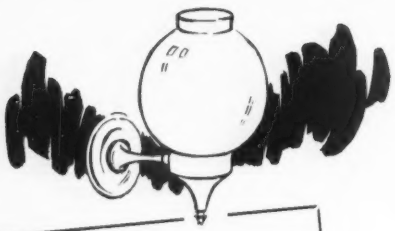
Three-in-One Liquid Soap

Beacon Chemical Co., Philadelphia, is currently advertising "do-do," a liquid soap product for household use which combines soap, water-softener and bleach.

Jerome Mendleson Dead

Jerome Mendleson, president of B. T. Babbitt, Inc., New York, manufacturers of household cleaners, died recently in Los Angeles at sixty-six years of age. Mr. Mendleson was also president of Holly Products Corp., Los Angeles, and several other corporations. At the age of sixteen, Mr. Mendleson entered the Albany firm of A. Mendleson & Son, manufacturers of chemicals, which was founded by his father in 1856. In 1917, the firm, the name of which had been changed to Mendleson Corp., bought B. T. Babbitt, Inc. Mr. Mendleson became president of the Babbitt company in 1919. He later became president of Kaylon, Inc., and of Bab-O, Ltd., the English branch of B. T. Babbitt, Inc., as well as Holly Products Corp.

FOR GOOD, LOW COST PERFUMING OF YOUR LIQUID SOAPS.....



FRAGRANT BLENDS FOR LIQUID SOAPS

BOUQUET No. 191..50c lb.
BOUQUET No. 194..65c lb.
BOUQUET No. 193..70c lb.
BOUQUET No. 192..80c lb.
LEMON No. 6.....50c lb.
LEMON No. 7.....65c lb.
LEMON No. 8.....70c lb.
PINE No. 17.....40c lb.
ROSE No. 37.....80c lb.
ROSE No. 38.....80c lb.
GERANIUM No. 7..70c lb.
(Rose-Geranium)
GERANIUM No. 8..$1.15 lb.
(Rose-Geranium)

(All lower priced in 5 and 25 lb. lots.)

A CHECK LIST OF DESIRABLE PROPERTIES FOR A GOOD LIQUID SOAP

1. Clarity .....☐
2. Agreeable odor .....☐
3. Neutrality .....☐
4. Rapid lather .....☐
5. Not too great lather volume..☐
6. Good cleansing action.....☐
7. Sufficient viscosity .....☐

If your product checks on all of these points, you'll have a good, salable dispenser soap . . . Use any of the Fritzsche Perfumes above in proper combination with other ingredients and it **will** check on Point No. 1 (Clarity) and Point No. 2 (Agreeable odor).

IT takes no great skill to make **low cost** perfumes for liquid soaps, but to make **GOOD, low cost** perfumes is quite another matter. To produce the latter requires, first of all, exceptional compounding skill, and second, the purchasing power that makes needed materials available at lowest possible cost.

Both of these have contributed substantially to the odor values represented in our new F.B. LIQUID SOAP PERFUMES. They produce extremely pleasant floral and bouquet effects at the low cost of one and a fraction cents per gallon, which, based upon the usual 15% and 20% solutions, brings the gallon cost of your product's fragrance to a mere **fraction of a penny.**

All perfume blends in the accompanying list are highly soluble and will not, therefore, affect the clarity of your product. Test samples for trial and comparison will be furnished upon request. Please address us on your letterhead.

FRITZSCHE BROTHERS, Inc.

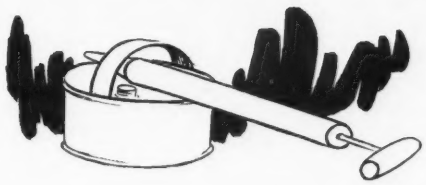
PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J AND SEILLANS (VAR) FRANCE

INSECTICIDE AIDS



EACH of the following specialties represents the results of intensive laboratory research as applied to some specific problem of deodorization or perfuming:

NEUTROLEUM

Completely and permanently deodorizes all technical mixtures, including insecticides, based upon petroleum distillates. In so doing it permits reduction of from 40 to 70% of the perfume subsequently used for aromatization. Very economical. From 10 to 12 pounds of NEUTROLEUM will permanently deodorize 8000 gallons of petroleum distillate.

DEODORANT P-36

Completely neutralizes the lethane odor effect in products containing Lethane No. 384 Special. Leaves no perceptible odor of its own. Powerful, economical.

SAFRELLA

An excellent and very inexpensive substitute for Artificial Sassafras. Can be used in all insecticide, germicide or technical mixtures.

JAVOLLAL

A powerful and efficient substitute for Citronella Oils of Java or Ceylon. Approximates twice the strength of Citronella and imparts a finer, cleaner and more attractive odor. May be used in insecticides, soaps and all technical mixtures.

METHALATE "C"

Possesses an odor similar to Methyl Salicylate and is equal in concentration, covering property and tenacity. Substitutes for the latter, at considerable saving, in insecticide sprays based upon kerosene distillates. Very useful in other technical products also.

Send for samples or descriptive circulars fully outlining various applications of the above specialties.

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

Enter Baby Soap Order

Imogene Shepherd, Ltd., Chicago, was ordered recently by the Federal Trade Commission to discontinue certain misleading statements in the sale of its "Baby Skin Oil Soap." The firm was directed to cease representing that the soap is a remedy or an effective treatment for dryness, roughness of skin, eczema and acne; will prevent and correct skin disfigurements; will rejuvenate the texture of the skin, or restore to adults the soft and silken texture of baby skin; will nourish or cause permanent benefit to the skin because of its vitamin E and so-called "vitamin F" content, or is the outstanding development in beauty culture of the present day.

To Hold Laundry Clinic

The West Coast Laundry and Cleaners' Allied Trades Association will sponsor an educational clinic in Oakland, Calif., October 25-27. The program for the clinic is being arranged by a committee headed by George C. Rups. The program at this state does not include any specific attention to soaps.

Modern Cosmeticology

By Ralph G. Harry, English analyst and consulting chemist. 288 pages, published by Chemical Publishing Co., New York. The book skims through the subject of properties and composition of cosmetic creams, bath preparations, shampoos and other hair products, face powders, lipsticks, dental preparations, sunburn products, and a host of other cosmetics,—35 chapters, all in 288 pages. From first chapter to last, the repeated inclusion of proprietary compounds, some well-known and others hardly known at all, under their proprietary names might well arouse the suspicion that the book is first a "come-on" for the materials mentioned, and second a discourse as indicated in the title. In his preface, the author states that he has aimed to avoid a mere collection of "cook book" formulae, but we fear his aim has been poor.—I.P.M.

U.S.I. ALCOHOL NEWS

September ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1940

NEW MARKETS FOR PERFUME MAKERS

PHARMACEUTICAL GELATINS BROADEN THEIR USEFULNESS

Emulsifying properties of the pharmaceutical gelatins are opening up new fields of application in preparing a wide variety of products, it was recently reported. These gelatins are now available in two types, it is said. One type is particularly suitable for use in emulsions containing 40-60% oil, and is claimed to result in pleasant-tasting emulsions.

A suggested formula for this type has the following proportions:

Gelatin	8 gm
Tartaric acid	0.6 gm
Alcohol	60 cc
Flavor	as desired
Syrup	100 cc
Water, to make	500 cc

This formula, it is claimed, is suitable for mixing with an equal quantity of such substances as castor oil or liquid petrolatum.

The second type of pharmaceutical gelatin is said to be intended for use in preparing dilute emulsions containing 5-25% oil phase, such as cosmetic emulsions and food products.

U.S.I. will gladly refer readers to a source of supply of these gelatins.

ALCOHOL IN SHAMPOOS ADDS TO FAT-SOLVENT PROPERTIES

Better cleansing effects in hair shampoos result from the use of alcohol in the formulations, it is reported. The ability of the alcohol to dissolve fats is said to be an especially desirable property in preparations for the hair—a property which is of value also in other preparations for the hair and scalp.

Perfume is in constant demand, and with the reduction in imports of foreign brands, the domestic manufacturer is in an excellent position to extend his markets. Purity of U.S.I. Alcohol helps the perfume maker to please a discriminating public.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

A packaging machine is said to be especially designed to handle Pliofilm, and to have the necessary precise temperature control and special folding mechanisms. **(No. 370a)**

A new perfume base is said to impart a combination of the aldehyde note and the chypre character. Maker recommends it for use in conjunction with a fougere. **(No. 371a)**

An indol derivative is reported to be suitable for use as a substitute for indol in any formula. It is said that it will not discolor nor cause discoloration. **(No. 372a)**

A powder filling machine is reported to be capable of handling 40 to 240 units per minute. Filling is by vacuum, it is said. **(No. 373a)**

A new synthetic substance is designed to replace certain waxes and greases in cosmetics, according to the maker. It is said to be non-hygroscopic, to have high affinity for essential oils, to require no preservative. **(No. 374a)**

A new finish is said to protect against attack by alcohol, oil, or water. It is applied by the maker to labels of his manufacture. **(No. 375a)**

A permanent wave solution minimizes any tendency toward burning or over-steaming of the hair, improves waving response, aids hair to retain natural texture, according to a recent patent. **(No. 376a)**

A new adhesive can be applied to paper, glass, leather, films of regenerated cellulose, is transparent and pressure-sensitive, can be pigmented if desired, it is claimed. **(No. 377a)**

Domestic Manufacturers Profit By Shortage of Foreign Brands

New sales opportunities for the American perfume industry are being opened up by current conditions, which have caused a substantial reduction in imports of foreign perfumes. Most of the raw materials needed in perfume formulations are available in ample quantities from domestic sources, and American chemists are constantly developing synthetic floral odors that allow the perfume manufacturer plenty of opportunity for interesting formulations. Vital factor in perfumes is the quality of the alcohol used. U.S.I.'s rigid control standards assure the perfume manufacturer of alcohol free from impurities that might cause disagreeable odors — help him to formulate products that please the most exacting taste.

ALCOHOL GIVES ASTRINGENT EFFECTS IN SKIN LOTIONS

Desirable astringent effects, without the use of mineral astringents, are easily obtained in skin lotions formulated with alcohol. In addition, the antiseptic and germicidal properties of alcohol are beneficial. Denaturants used by U.S.I. in the 16 formulas of S. D. Alcohol authorized for use in facial and hand lotions are selected with extreme care.

HIGH QUALITY PURE ALCOHOL DEMANDED BY PURCHASERS

U.S.I. Pure Alcohol exceeds U.S.P. specifications for quality, purity and uniformity. U.S.I., the oldest and leading producer of pure alcohol, has extensive production facilities and ample stocks in conveniently located warehouses to serve its customers.

Manufacturers of drugs, pharmaceuticals, and food flavorings, as well as medical and scientific institutions, are creating an increasing demand for U.S.I. Pure Alcohol.

U.S.I INDUSTRIAL CHEMICALS, INC.
60 EAST 42ND ST., NEW YORK (USI) BRANCHES IN ALL PRINCIPAL CITIES
INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

Contracts Awarded

Toilet Soap Award

Colgate - Palmolive - Peet Co., Jersey City, was awarded the contract on 7,500 cakes of toilet soap at 2.24 cents a cake in a recent opening by the Army Quartermaster, Chicago.

Soap Awards

Day & Frick, Philadelphia, were awarded the contracts on 13,700 cakes of grit soap at 2.8 cents and 11,800 cakes of grit soap at 2.1 cents in a recent opening by the Army Quartermaster, Ft. Sam Houston, Texas. In the same opening Selmar Soap Co., Memphis, was awarded the contract on 241,700 pounds of laundry soap at 3.29 cents a pound.

Scouring Compound Bid

Imperial Products Co., Philadelphia, submitted the low bid of 1.32 cents a pound on 9,000 pounds of scouring compound powder in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Toilet Soap Bid

Colgate - Palmolive - Peet Co., Jersey City, bid low on 16,000 pounds of toilet soap at 6.98 cents a pound in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Grit Soap Bid

Iowa Soap Co., Burlington, Iowa, was low bidder on 14,063 pounds of grit soap at 7.2 cents a pound in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Soap Powder Bids

Armour & Co., Chicago, bid low on 250,000 pounds of soap powder at 2.45 cents, f.o.b. works, and 2.53 cents, delivered eastern yard, in a recent opening by the Bureau of Supplies and Accounts, Navy Department, Washington, D. C. For delivery to the western yard, a low bid of 2.75 cents was submitted by both Colgate-Palmolive-Peet Co., Berkeley, Calif., and Pacific Soap Co., Los Angeles.

Grit Soap Bid

Larkin Soap Co., Teaneck, N. J., was low bidder on 2,088 pounds of grit soap at 3.74 cents in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Soap Paste Bid

Unity Sanitary Supply Co., New York, submitted the low bid of 5.4 cents on 7,200 pounds of soap paste in a recent opening by the Treasury Procurement division, Washington, D. C.

Soap Chip Award

Armour & Co., Chicago, was awarded the contract on 10,000 pounds of soap chips at 5.37 cents in a recent opening by the Army Quartermaster Corps, Chicago.

Soap Bids

Day & Frick, Philadelphia, were low bidders on 15,000 pounds of grit soap at 3.15 cents in a recent opening by the Procurement division, Treasury Department, Washington, D. C. In the same opening, Chicago Sanitary Products Co., Chicago, bid low on 2,400 pounds of laundry soap at 7.25 cents.

Soap Bids

Armour & Co., Ft. Worth, Texas, submitted the low bid of 2.58 cents on 4,500 pounds soap chips in a recent opening by the Procurement division, Treasury Department, Washington, D. C. Gillam Soap Works, Ft. Worth, Texas, submitted the low bid of 4 cents on 2,400 cakes of laundry soap in the same opening.

Cleaner & Polisher Award

Grace Mfg. Co., Cincinnati, was awarded the contract on 4,608 quarts cleaner and polisher at 14.25 cents, domestic, and 15.5 cents, export, f.o.b. plant, in a recent opening by the Army Air Corps Supply division, Wright Field, Ohio.

Laundry Soap Bid

J. Eavenson & Son, Camden, N. J., submitted the low bid of 1.69 cents on 200,000 pounds of laundry soap in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Grit Soap Bid

S. & S. Soap Corp., Brooklyn, entered the low bid of 3.44 cents on 18,750 pounds of grit soap in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Grit Soap Award

Hunnewell Soap Co., Cincinnati, was awarded the contract on 27,000 cakes of grit soap, 9 to 10-oz. cakes, at 2.75 cents in a recent opening by the Army Quartermaster, Jeffersonville, Ind.

Laundry Soap Award

Colgate - Palmolive - Peet Co., Jersey City, was awarded the contract on 364,000 pounds of laundry soap at 2.75 cents in a recent opening by the Army Quartermaster, Jeffersonville, Ind.

Laundry Soap Award

John T. Stanley Co., New York, was awarded the contract on laundry soap valued at $14,705.30 in a recent opening by the Quartermaster Corps, War Department, Washington, D. C., under the Walsh-Healey Act.

Soap Chip Bid

J. Eavenson & Son, Camden, N. J., entered a low bid of 4.19 cents on 45,000 pounds of soap chips in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Laundry Soap Bid

Procter & Gamble Distributing Co., Baltimore, submitted the low bid of 2.6 cents on 38,400 pounds of laun-

(*Turn To Page* 123)

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Attention: Mr. Perfumer

If present market conditions, especially true of essential oils, not only affect your perfume *budget*, adversely, but actually threaten to disrupt the uniform quality of your own perfume creations,

Why not let us do *your* Perfume "copy"

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New Trade Marks

The following trade-marks were published in the August issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

PATRICK'S—This in solid letters under drawing of shamrock describing polish and cleaner. Filed by Frank E. Patrick, San Francisco, April 23, 1940. Claims use since Dec. 23, 1936.

ZIM—This in solid letters describing greaseless cleaner. Filed by Anthony J. Pappas, Zim Products Co., Dayton, May 13, 1940. Claims use since April 22, 1940.

CHARTER OAK—This in solid letters describing soaps. Filed by J. B. Williams Co., Glastonbury, Conn., May 27, 1940. Claims use since May 20, 1940.

GRIFFIN—This in reverse letters on colored triangle super-imposed on concentric circles describing shoe polish. Filed by Griffin Manufacturing Co., New York, May 29, 1940. Claims use since April 11, 1940.

X O—This in script letters describing soap. Filed by Joseph Metrie, XO Co., Milwaukee, June 6, 1940. Claims use since May 25, 1940.

HYPO-BORO—This in solid letters describing fungicide. Filed by Kremers Urban Co., Milwaukee, Nov. 30, 1939. Claims use since June 1, 1931.

MARTIN'S TERMI-TREAT—This in stenciled letters describing wood preservative. Filed by C. J. Martin & Sons, Inc., Austin, Texas, March 26, 1940. Claims use since Sept. 28, 1939.

TUBACIDE—This in fancy letters describing insecticide. Filed by Miller Chemical & Fertilizer Corp., Baltimore, May 20, 1940. Claims use since March 1, 1938.

KREST—This in solid letters describing polish. Filed by Sebastian S. Kresge, Kresge Department Store, Newark, May 13, 1939. Claims use since June 20, 1929.

NAIRN—This in fancy letters describing floor wax. Filed by Congoleum-Nairn Inc., Kearny, N. J., May 14, 1940. Claims use since March 3, 1939.

GRIME DOESN'T PAY—This in solid letters describing cleanser. Filed by La Maison Products, Inc., New York, May 19, 1939. Claims use since Oct. 13, 1938.

AUTO SHAMPOO—This in solid letters describing cleaner. Filed by Turco Products, Inc., Los Angeles, July 19, 1939. Claims use since Apr. 3, 1939.

STEAMAID—This in solid letters describing detergent cleaning compound. Filed by Turco Products, Inc., Los Angeles, Mar. 2, 1940. Claims use since Apr. 21, 1939.

WHITE SAIL — This in solid letters describing soap flakes. Filed by Great Atlantic & Pacific Tea Co., New York, May 21, 1940. Claims use since Apr. 24, 1940.

ATLAS—This in solid letters describing tirewall cleaner. Filed by Atlas Supply Co., Newark, May 28, 1940. Claims use since May 17, 1940.

DUROCK — This in solid letters describing disinfectants. Filed by Durock Co., New York, May 17, 1939. Claims use since Dec., 1924.

MINIPOO—This in solid letters describing dry shampoo powder. Filed by Annette Jennings, Inc., New York, May 20, 1940. Claims use since Apr. 19, 1940.

CAROMA—This in solid letters describing liquid odorant. Filed by Expello Corp., Dover, N. H., May 25, 1940. Claims use since Sept. 26, 1939.

PRO-TEX-IDE—This in reverse letters on colored ribbon under drawing of mounted crusader describing disinfectant. Filed by Pro-Tex-Ide Chemical Corp., Indianapolis, June 14, 1940. Claims use since Aug. 1, 1939.

CORNTROL—This in solid letters describing insecticides. Filed by Stanco, Inc., New York, June 25, 1940. Claims use since May 28, 1940.

MECHLING'S — This in solid letters describing cleanser. Filed by General Chemical Co., New York, Mar. 13, 1940. Claims use since 1892.

KLENZCRAFT — This in fancy letters describing soaps. Filed by United Buyers Corp., Foodcraft Products, Chicago, Apr. 8, 1940. Claims use since Feb. 10, 1937.

HELOZON—This in solid letters describing shampoo. Filed by Moses L. Heim, New York, Apr. 18, 1940. Claims use since February, 1940.

DOLGE—This in reverse letters under drawing of man slaying a dragon describing disinfectants. Filed by C. B. Dolge Co., Westport, Conn., May 24, 1940. Claims use since May, 1938.

GENIFILM—This in solid letters describing insecticide distributing preparation. Filed by General Chemical Co., New York, June 20, 1940. Claims use since May 17, 1940.

WESTAMINE—This in solid letters describing disinfectant. Filed by West Disinfecting Co., Long Island City, July 2, 1940. Claims use since May, 1940.

TERAMINE—This in solid letters describing disinfectant. Filed by West Disinfecting Co., Long Island City, N. Y., July 2, 1940. Claims use since May, 1940.

MAYBREATH — This in script letters describing mouth wash. Filed by Pepsodent Co., Chicago, July 3, 1940. Claims use since June 11, 1940.

PEPSODENT—This in script letters describing dentifrices. Filed by Pepsodent Co., Chicago, July 3, 1940. Claims use since Juse 11, 1940.

TIDY HOUSE — This in solid letters describing self-polishing wax. Filed by Vernon B. Hunt, Tidy House Products Co., Des Moines, Jan. 17, 1940. Claims use since June, 1939.

HEART'S DELIGHT — This in solid letters describing floor wax.

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Filed by Scoville, Brown & Co., Wellsville, N. Y., June 8, 1940. Claims use since 1910.

MY DAD'S—This in solid letters over portrait of a girl in circle describing washing powder. Filed by Specialty Mfg. & Sales Co., Oaklawn, Ill., Apr. 11, 1940. Claims use since Mar. 15, 1940.

SANANIZE—This in solid letters describing farm disinfectant. Filed by Wm. J. Finch, Farm Sananize Mfg. Co., Mason City, Iowa, Mar. 9, 1940. Claims use since Oct. 1, 1939.

ATLOX—This in solid letters describing parasiticides. Filed by Atlas Powder Co., Wilmington, Del., June 11, 1940. Claims use since May 20, 1940.

DOGCHECK — This in reverse letters on representation of a ribbon describing animal repellents. Filed by R. H. Harkins, Nott Mfg. Co., New York, June 15, 1940. Claims use since May 3, 1940.

MILD-EX—This in outline letters on banner describing disinfectant. Filed by Perfex Co., Tacoma, Wash., June 27, 1940. Claims use since May 31, 1940.

CITRODOR CANDLES — This in solid letters describing insect repellent candles. Filed by C. D. Stewart, C. D. Stewart Co., Boston, July 10, 1940. Claims use since June 26, 1940.

SALICRES'N—This in solid letters describing fungicide. Filed by Upjohn Co., Kalamazoo, Mich., July 11, 1940. Claims use since June 22, 1940.

Trade Marks Granted

379,858. Germicidal cleanser. Frederick C. Hill, Germi-Sheen Co., Freeport, Maine. Filed Dec. 13, 1939. Serial No. 426,527. Published Apr. 16, 1940. Class 16.

379,915. Cleaning compound. Devonshire-Artic Chemical Co., Boston. Filed Mar. 25, 1940. Serial No. 429,936. Published May 21, 1940. Class 4.

379,995. Cleaner. American Products Co., Visco Chemical Products Co., Cincinnati. Filed Oct. 28, 1939. Serial No. 424,985. Published May 21, 1940. Class 4.

380,164. Metal polish. Ford Motor Co., Dearborn, Mich. Filed Dec. 30, 1939. Serial No. 427,018. Published June 4, 1940. Class 4.

380,207. Washing powder. Rite Packing Corp., Lyndhurst, N. J. Filed Apr. 4, 1940. Serial No. 430,303. Published June 4, 1940. Class 4.

380,208. Shoe cleaner. Hecker Products Corp., New York. Filed Apr. 3, 1940. Serial No. 430,317. Published June 4, 1940. Class 4.

380,209. Shoe soap. Hecker Products Corp., New York. Filed Apr. 3, 1940. Serial No. 430,318. Published June 4, 1940. Class 4.

380,266. Tooth powder. Nathan Spitzer, New York. Filed Mar. 14, 1939. Serial No. 417,063. Published May 21, 1940. Class 6.

380,267. Disinfectant. Dehls & Stein, Inc., Newark, N. J. Filed Mar. 22, 1939. Serial No. 417,366. Published May 21, 1940. Class 6.

380,277. Insecticidal cards. Max Berg Mfg. Co., Tulsa, Okla. Filed May 25, 1939. Serial No. 419,789. Published Feb. 13, 1940. Class 6.

380,285. Water softener. Sam. Farruggia. Capitol Chemical Co., Chicago. Filed Sept. 25, 1939. Serial No. 423,993. Published May 14, 1940. Class 6.

380,294. Soap perfume oils. Polak's Frutal Works, Inc., Long Island City, N. Y. Filed Oct. 30, 1939. Serial No. 425,064. Published May 7, 1940. Class 6.

380,330. Liquid tooth cleanser. C. H. Clark, Toothfoam Co., San Francisco. Filed Feb. 12, 1940. Serial No. 428,461. Published May 14, 1940. Class 6.

380,346. Fungicide. Sulphur Products, Inc., Wooster, Ohio. Filed Feb. 28, 1940. Serial No. 429,012. Published June 11, 1940. Class 6.

380,353. Japanese beetle preparation. Golf & Lawn Supply Co., Scarsdale, N. Y. Filed Mar. 2, 1940. Serial No. 429,118. Published May 14, 1940. Class 6.

380,373. Athlete's foot ointment. W. K. Penn, I. P. A. Mfg. Co., McKinney, Texas. Filed Mar. 8, 1940. Serial No. 429,373. Published May 7, 1940. Class 6.

380,377. Sodium tetraphosphate. Rumford Chemical Works, Rumford, R. I. Filed Mar. 11, 1940. Serial No. 429,457. Published May 14, 1940. Class 6.

380,385. Ant preparation. Isabelle Allore, Belle Specialty Co., Lake Geneva, Wis. Filed Mar. 14, 1940. Serial No. 429,554. Published May 28, 1940. Class 6.

380,393. Insecticides. E. D. O'Connell; Cardinal Insecticide Co., Philadelphia. Filed Mar. 16, 1940. Serial No. 429,664. Published May 14, 1940. Class 6.

380,398. Antiseptic. Hyman Freedman, Thymolac Co., Buffalo. Filed Mar. 18, 1940. Serial No. 429,696. Published May 28, 1940. Class 6.

380,402. Insect spray. W. H. Barber Co., Minneapolis. Filed Mar. 19, 1940. Serial No. 429,727. Published May 28, 1940. Class 6.

380,407. Insecticides. General Chemical Co., New York. Filed Mar. 21, 1940. Serial No. 429,318. Published May 7, 1940. Class 6.

380,420. Antiseptic. F. J. Sowa, Silbrite Chemical Co., New York. Filed Mar. 27, 1940. Serial No. 430,041. Published June 11, 1940. Class 6.

380,421. F. J. Sowa, Silbrite Chemical Co., New York. Filed Mar. 27, 1940. Serial No. 430,042. Published June 11, 1940. Class 6.

380,466. Deodorant. Formalda Co., Minneapolis. Filed Apr. 10, 1940. Serial No. 430,594. Published May 28, 1940. Class 6.

380,470. Insecticides. Orville E. McKim, Port Chester, N. Y. Filed Apr. 10, 1940. Serial No. 430,616. Published May 21, 1940. Class 6.

380,474. Detergent. George E. Sherman Co., New York. Filed Apr. 12, 1940. Serial No. 430,698. Published May 21, 1940. Class 6.

380,502. Insecticides. J. C. Mason, Creative Products Co., New York. Filed Apr. 22, 1940. Serial No. 431,069. Published June 11, 1940. Class 6.

380,508. Disinfectant. West Disinfecting Co., Long Island City, N. Y. Filed Apr. 26, 1940. Serial No. 431,281. Published June 11, 1940. Class 6.

Black Star

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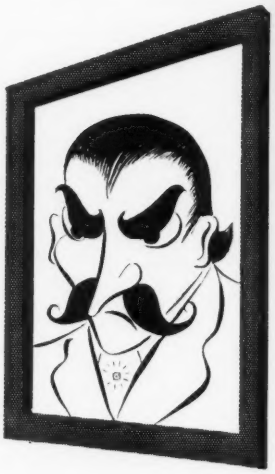

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Technical men have proved our quality—and made Crosby a world factor in Naval Stores. Finished products made with Crosby ingredients are proving their reliability and their salability in competitive markets.

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Crosby Naval Stores, Inc.
PICAYUNE, MISSISSIPPI

Raw Material Markets

As of August 28, 1940

NEW YORK—Quotations on all important oils, fats and greases for the soap maker continued in the gradual decline which has persisted over the last several months, tallow, grease, coconut oil, fatty acids, corn oil, cottonseed oil and soy bean oil being among those items quoted today at lower levels than a month ago. Prices are kept low by a lack of confidence among buyers and a disinclination in many cases to purchase in advance of immediate needs pending further developments in Europe and in political affairs in America. Pyrethrum extracts and insect powder continued to move to lower price levels. In the essential oil market most of the price movements were in a downward direction, citronella, lemongrass, patchouli, peppermint, rosemary, spearmint and some grades of geranium all being quoted at lower levels. Chemical prices remained stable.

Animal Fats

Tallow, grease and lard quotations moved downward this period in the absence of business activity although lard futures displayed a steadier appearance toward the close of the period. Still disposed to wait for stimulating news from abroad and for definite developments in the political picture in the United States, most buyers are not taking on larger stocks than are necessary for present needs. It is believed in some circles that strengthening of demand and prices will take place as a result of the hoped-for improvement in industrial activity induced by increased defense expenditures.

Vegetable Oils

Most vegetable oils used in soap making fell to lower price levels this period. Crude cottonseed oil dropped off 3/8 cent; coconut oil, crude, dropped off 1/8 cent; soybean oil fell 3/4 to 1/8 cent; palm oil fell 1/8 cent, and linseed oil dropped 6/10 cent a pound. Most vegetable oil fatty acid prices are weak, general lack of confidence being responsible for the present tone of the market. Denatured olive oil is being sold in some cases as high as $1.75 a gallon, with a strong probability of higher prices should averse foreign conditions continue unchanged. Estimated American stocks will last only two or three months.

Essential Oils

Spanish rosemary oil was reduced in price 3 cents this period, cans being currently quoted at 64 to 66 cents a pound and drums at 59 to 61 cents a pound. Oil of citronella, Ceylon, was marked down to a price range of 30 to 31 cents a pound, while the Java grade, also down, is currently quoted at 29 to 30 cents a pound. A 3-cent reduction in the price of lemongrass oil brought quotations down to a level of 65 to 70 cents a pound. Pennyroyal, eucalyptus, and others remained firm at the higher levels reached last month. Stocks of Italian bergamot oil are being depleted steadily, producing a greater interest in the artificial products. Lavender prices are higher than a month ago; stocks are relatively low in the United States with no replacements coming from France.

Carnauba Wax

After falling steadily during the first half of the month, carnauba wax prices suddenly reversed and were advanced, making up for price reductions earlier in the period. No. 3, chalky, ton lots, is currently quoted at 50 to 51 cents a pound, small lots at 50 1/2 to 52 cents a pound; No. 3, North Country, ton lots, 51 to 52 cents, small lots, 51 1/2 to 53 cents; No. 2, North Country, 54 to 55 cents a pound; No. 1, 62 to 64 cents a pound.

Insecticide Materials

Pyrethrum extract prices fell off sharply this period, the material being quoted by most sellers at about $4.80 to $5.00 for the 20 to 1 extract. Insect powder also was reduced 4 to 5 cents a pound to a current level of 23 to 25 cents. Rotenone-bearing roots remained virtually unchanged in price. Powdered red squill prices rose sharply as a delayed result of developments in the Mediterranean. Current prices are nominal from 75 cents to $1.00 a pound.

—♦—

Shulton Presents New Line

After testing customer acceptance for "Friendship's Garden" toilet water in a trial campaign with satisfactory results, Shulton, Inc., New York, has come out with a complete line of toiletries built around the "Friendship's Garden" fragrance and style of packaging. Scented with the characteristic fragrance of the new line, the soap items come in three sizes,—guest, toilet and bath, each cake individually wrapped in floral decorated paper. The guest soap, packaged six cakes to a box, retails at $1.00; the toilet soap, three cakes to a box, retails at $1.00 and the bath soap, three cakes to a box, retails at $1.50.

—♦—

Toilet Goods Shows

The Co-Metic Club will hold its third annual Mid-West Toilet Goods Show at the Hotel Radisson in Minneapolis, for one week beginning September 1. The New England Toilet Goods Show is to be held at the Parker House, Boston, from September 9 to 23.

—♦—

Elmont W. Sargent Dies

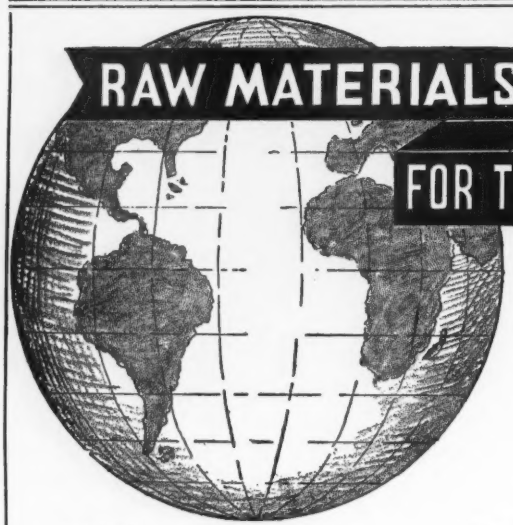
Elmont W. Sargent, manager of the Chicago office of Lever Brothers Co., died recently at the age of sixty-one years.

RAW MATERIALS 1838-1940

FOR THE SOAP INDUSTRY

Oils Fats
Chemicals
Fatty Acids
White Mineral Oils
Petrolatums

FROM ALL PARTS OF THE WORLD



Mineral Oils — Petrolatums

Fatty Alcohols — Special Fatty Acids

Castor Oil	Olive Oil Foots	Fatty Acids	Grease	Modified Soda
Cocoanut Oil	Peanut Oil	Lard Oils	Lanolin	Silicate Soda
Corn Oil	Perilla Oil	Neatsfoot Oil	Caustic Soda	Metasilicate
Cottonseed Oil	Rapeseed Oil	Oleo Stearine	Soda Ash	Tri Sodium Phosphate
Palm Oil	Sesame Oil	Stearic Acid	Caustic Potash	Di Sodium Phosphate
Palm Kernel Oil	Soya Bean Oil	White Olein	Carbonate Potash	Chlorphyll
Olive Oil	Teaseed Oil	Tallow	Sal Soda	Superfatting Agent

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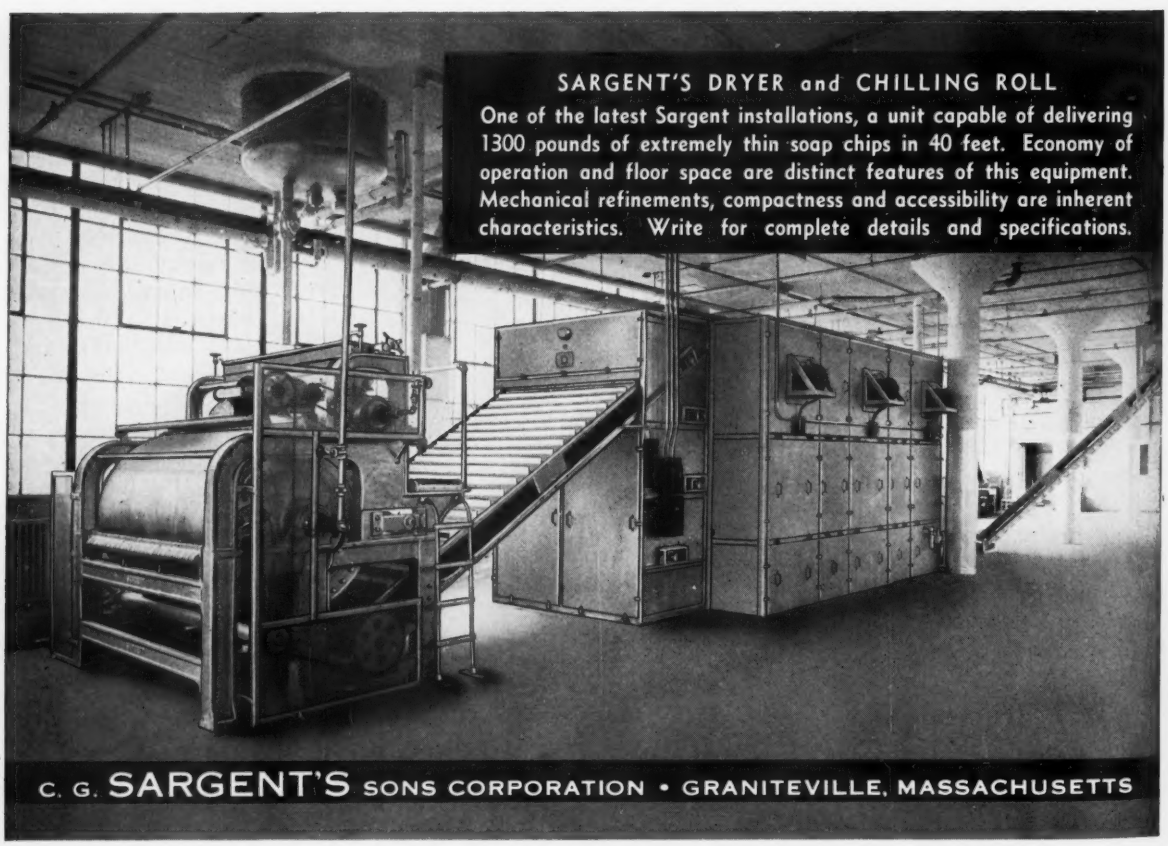

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C. G. SARGENT'S SONS CORPORATION • GRANITEVILLE, MASSACHUSETTS

Raw Material Prices

(As of August 26, 1940)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities

Chemicals

Acetone, C. P., drums	lb.	$ .06½	$ .07
Acid, Boric, bbls. 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.70
Low boiling grade	gal.	.68	.70
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	5.99½	6.06
Complete Denat., SD 1, drums, ex.	gal.	.28½	.34½
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	26.00
Cresol, U.S.P., drums	lb.	.09¾	.10¼
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.08¾	.09
Soap, lye, drums	lb.	.07¾	.08¼
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	—	2.45
Mercury Bichloride, kegs	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.06¼	.07
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.15½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid), drums	lb.	.13	.14¾
Pine Oils, bbls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03½	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.02¾	.03⅛
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	1.98	2.44
Grade I to N	100 lb.	2.44	2.59
Grade WG to X	100 lb.	2.87	3.09
Wood	100 lb.	1.90	Nom.
Rotten Stone, pwd., bbls.	lb.	—	—
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.17	.25
Olive Castile, powder	lb.	.26	.29
Powdered White, Neutral	lb.	.18½	.20
Olive Oil Foot, bars, 68-70%	lb.	.09	—
Green, U.S.P.	lb.	.08	.09
Tallow Chips, 88%	lb.	.06⅛	.06¾
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07	.08¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb	2.35	3.35
Sodium Pyrophosphate	100 lb	5.10	5.30
Sodium Silicate, 40 deg., drum	100 lb	.80	1.20
Drums, 52 deg. wks.	100 lb	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.27
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	lb.	.0225	.0285
Zinc Oxide, lead free	lb.	.06½	.07¾

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.05¾	Nom.
Castor, No. 1, bbls.	lb.	.11¼	.12
No. 3, bbls.	lb.	.10¾	.11½
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.02¾	—
Tanks, Pacific Coast, futures	lb.	.02⅛	—
Copra, bulk, coast	lb.	.0140	—
Corn, tanks, Mills	lb.	.05¼	—
Cottonseed, crude, tanks, mill	lb.	.04½	.04⅞
PSY, futures	lb.	.05⅜	.05⅞
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.08¾	.09¼
Coconut Oil, tanks, Twitchell, Chi.	lb.	.09¼	.09¾
Cotton Oil, tanks, Chicago	lb.	.07¾	.08¼
Settled soap stock, Chicago	lb.	.02¾	.03
Boiled soap stock, 65%, Chi.	lb.	03¾	.04
Foots, 50%, Chicago	lb.	.01⅜	.01⅝
Red Oil, bbls., dist. or sapon.	lb.	.06¼	.07¼
Tanks	lb.	.05¾	—
Stearic Acid, saponif.			
Double pressed	lb.	.09¼	.10¼
Triple pressed	lb.	.12	.13
Greases, choice white, tanks, Chi.	lb.	.02¾	.03
Yellow	lb.	.02½	.02⅝
Lard, city	lb.	.05¼	.05½
Linseed, raw, bbls.	lb.	.0850	.0950
Tanks, raw	lb.	.0790	.0810
Olive, denatured, bbls., N. Y.	gal.	1.50	1.75
Foots, bbls., N. Y.	lb.	.08⅝	.08¾
Palm, Sumatra, cif. New York, tanks	lb.	.02¼	Nom.
Palm, kernel, shipment	lb.	No Prices	
Soya Bean, domestic, tanks, crude	lb.	.04¼	Nom.
Stearine, oleo, bbls.	lb.	.05⅛	Nom.
Tallow, special, f.o.b. plant	lb.	.03¼	—
City, ex. loose, f.o.b. plant	lb.	.03⅜	—
Teaseed Oil, crude	lb.	.12½	Nom.
Whale, refined	lb.	.0910	Nom.

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Almond, Bitter, U.S.P.	lb.	$2.75	$3.00
Bitter, F.F.P.A.	lb.	3.00	3.25
Sweet, cans	lb.	.70	.75
Anise, cans, U.S.P.	lb.	.72	.75
Bay, cans	lb.	1.20	1.25
Bergamot, coppers	lb.	8.50	Nom.
Artificial	lb.	1.25	3.50
Birch Tar, rect., cans	lb.	.75	.80
Crude, dms.	lb.	.25	.26
Bois de Rose, Brazilian	lb.	1.60	1.65
Cayenne	lb.	1.70	1.80
Cade, cans	lb.	.40	.45
Cajeput, native, cans	lb.	.62	.72
Calamus, cans	lb.	8.25	8.50
Camphor, Sassy, drums	lb.	.28	.29
White, drums	lb.	.32	.33
Cananga, native, cans	lb.	1.60	1.65
Rectified, cans	lb.	2.00	2.35
Caraway Seed	lb.	5.00	5.25
Cassia, Redistilled, U.S.P.	lb.	1.35	1.40
Cedar Leaf, cans	lb.	.80	.85
Cedar Wood, light, drums	lb.	.19	.22
Citronella, Java, drums	lb.	.29	.30
Citronella, Ceylon, drums	lb.	.30	.31
Clove, U.S.P., cans	lb.	1.20	1.25
Eucalyptus, Austl., U.S.P., cans	lb.	.70	.72
Fennel, U.S.P., cans	lb.	3.00	3.25
Geranium, African, cans	lb.	3.75	4.00
Bourbon, cans	lb.	3.50	3.75
Turkish	lb.	2.25	2.50
Hemlock, tins	lb.	.65	.70
Lavender, U.S.P., cans	lb.	3.50	3.75
Spike, Spanish, cans	lb.	1.20	1.85
Lemon, Ital., U.S.P.	lb.	4.75	Nom.
Cal.	lb.	3.10	3.25
Lemongrass, native, cans	lb.	.65	.70
Linaloe, Mex., cases	lb.	1.30	1.35
Nutmeg, U.S.P., cans	lb.	2.60	2.70
Orange, Sweet, W. Ind., cans	lb.	2.00	2.10
Italian cop	lb.	8.00	Nom.
Distilled	lb.	.90	—
California, expressed	lb.	2.00	—
Origanum, cans, tech.	lb.	1.80	—
Patchouli	lb.	6.50	6.75
Pennyroyal, dom.	lb.	3.00	Nom.
Imported	lb.	2.50	2.75
Peppermint, nat., cans	lb.	2.35	2.60
Redis, U.S.P., cans	lb.	2.60	2.85
Petitgrain, S. A., cans	lb.	1.50	1.55
Pine Needle, Siberian	lb.	1.35	1.40
Rosemary, Spanish, cans	lb.	.64	.66
drums	lb.	.59	.61
Sandalwood, E. Ind., U.S.P.	lb.	5.25	5.50
Sassafras, U.S.P.	lb.	1.15	1.20
Artificial, drums	lb.	.80	.81
Spearmint, U.S.P.	lb.	2.10	2.15
Thyme, red, U.S.P.	lb.	.80	1.75
White, U.S.P.	lb.	.95	1.95
Vetivert, Bourbon	lb.	5.50	5.75
Ylang Ylang, Bourbon	lb.	3.00	6.50

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.60	—
Amyl Cinnamic Aldehyde	lb.	1.70	$2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.55	.60
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.00	7.00
Coumarin	lb.	2.75	3.00
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.80	.85
Eugenol, U.S.P.	lb.	1.75	2.00
Geraniol, Domestic	lb.	.60	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	3.00	3.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Iso-Eugenol	lb.	2.80	4.25
Linalool	lb.	2.10	3.30
Linalyl Acetate	lb.	1.75	3.00
Menthol	lb.	2.50	3.50
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.20	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.65	3.95
Ketone	lb.	3.70	4.10
Xylol	lb.	1.05	1.20
Phenylacetaldehyde Sp.	lb.	2.10	2.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.30	3.35
Rhodinol	lb.	5.50	10.90
Safrol	lb.	1.00	1.10
Terpineol, C. P., drs.	lb.	.25	—
Cans	lb.	.28	—
Terpinyl Acetate, 25 lb. cans	lb.	.82	.85
Thymol, U.S.P.	lb.	1.55	1.60
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.25	1.55

Insecticide Materials

Insect Powder, bbls.	lb.	.23	.25
Pyrethrum Extract			
5 to 1	gal.	1.25	1.45
20 to 1	gal.	4.80	5.25
30 to 1	gal.	7.15	7.80
Derris, powder—4%	lb.	.17	.20
Derris, powder—5%	lb.	.21	.25
Cube, powder—4%	lb.	.16	.19
Cube, powder—5%	lb.	.20	.25
Squill, dried (3 gr. basis)	lb.	.75	1.00
Phosphorous paste	lb.	.25	.62½

Gums

Arabic, Amb. Sts.	lb.	.14	.15
White, powdered	lb.	.18	.20
Karaya, powdered No. 1	lb.	.14	.33
Tragacanth, Aleppo, No. 1	lb.	3.50	3.75
Flake	lb.	No Prices	

Waxes

Bees, white	lb.	.35	.37
African, bgs.	lb.	.23	.24
Refined, yel.	lb.	.29	.31
Candelilla, bgs.	lb.	.18½	.19
Carnauba, No. 1, yellow	lb.	.62	.64
No. 2, N. C.	lb.	.54	.55
No. 3, Chalky	lb.	.50	.52
Ceresin, yellow	lb.	.11½	.15
Paraffin, ref., 125-130	lb.	.0570	—

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Production Section

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries.*

Oil Refining Test

A SIMPLE mechanical test for the degree of purification of liquid fats following various types of refining has been developed after a study of the possibilities of several physical methods. The test is derived from the method for surface-tension measurement by the ring-separation method. Surface-tension measurements by this and by several other methods were applied to crude and refined oils but the differences in the results were too small to serve as a criterion of purification, often being of the order of 5 per cent. The new test measures the amount of fat adsorbed or held on the surface of a platinum ring when the ring is removed from the oil. The less pure the oil, the more will stick to the ring. The method was applied to a number of oils and appears to work for almost all oils of plant origin with the exception of olive oil and palm oil. Results with palm-kernel oil were satisfactory.

The following table illustrates the differences that are shown by the degree of purification of the oil:

Oil	*Ring Value Average Result In mg.*
Soybean oil, crude	12.4
Soybean oil, water-washed and neutralized	5.8
Soybean oil, water-washed, neutralized and bleached	2.3
Soybean oil heated to 300°C.	2.2
Linseed oil, crude	8.7
Linseed oil water-washed and neutralized	5.1
Linseed oil water-washed, neutralized and bleached	2.3
Rapeseed oil, crude	10.5
Rapeseed oil treated with 1% charcoal	6.3
Rapeseed oil treated with purified Carlonit	2.1

The values obtained were reproducible. Steps in purification indicated in the table include washing the oil with water to remove glutinous matter, neutralization of free fatty acids with caustic soda, and bleaching by treatment with an adsorptive earth.

Method: A weighed platinum ring is dipped by means of tweezers into an oil in such a way that it remains parallel to the surface of the oil and the upper side of the ring is wetted by the oil. After a few seconds it is slowly withdrawn. The ring is weighed with the oil which adheres to it. From 3 to 5 determinations are made in this way and the average taken. The amount of oil obtained in milligrams is called the "ring value." The ring can be cleaned with solvents and in a flame. The diameter of the platinum ring used was 16 mm. and the temperature of the test 20°C. H. P. Kaufmann and P. Kirsch. *Fette und Seifen* **47,** 191-6 (1940).

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One of the most fruitful fields of organic synthesis has been in the preparation of new amines. Triethanolamine was one of the first of these compounds and was produced for a manufacturer of vat dyestuffs where a high-boiling base was required for pasting such dyestuffs. Triethanolamine combines with fatty acids to form soaps, probably its largest commercial use at the present time. The soaps are emulsifying agents for various oils, waxes, asphalts and other water-insoluble materials. The amine itself is an effective remedy for "athlete's foot." Monoethanolamine and diethanolamine are also produced commercially.

Another series of amines of growing importance is the ethylene amine group. The first member of the propylene amine series is also available commercially.

The isopropanolamines form soaps, and it is believed that the toxicity of these compounds is less than that of the ethanol group. The methyl groups present in the isopropanolamines make their soaps somewhat more soluble in hydrocarbons than other amine soaps, a property of interest in the field of cosmetics and in dry-cleaning.

Another amine of industrial importance is morpholine, a ring compound containing an ether linkage. One of its most useful properties is the ability of its soaps to dissociate sufficiently to allow the morpholine to evaporate from emulsions. This allows the formulation of rubless polishes and other emulsion coatings, such as water-base

floor polish, that become water-resistant upon drying, due to the lack of any water-soluble component in the film after the soap has dissociated and the morpholine has evaporated. This property should be of interest also in the preparation of emulsion paints, orchard sprays and the like. A group of surface-active compounds of non-fatty oirgin are low in detergency but useful as penetrants and wetting agents. H. F. Robertson. *Canadian Chemistry & Process Industries* **24,** 290-1 (1940).

New Oil Processing

The paint industry is keenly interested in new sources of fast-drying oils with properties resembling those of tung oil and perilla oil. Tung oil contains about 84 per cent of eleostearic triglycerides with 3 conjugated double bonds in the fatty acids. New products having a number of the advantages of tung oil have been obtained from Canadian domestic oils by a process of segregation. The original oils are semi-drying, such as soybean and fish oils.

The segregated product known as "Polymerol A" is essentially a blend of the oils theoretically present in natural oils as the triglycerides of the unsaturated fatty acids containing 2 or more double bonds, linked together at points of unsaturation in a partially polymerized condition. This would leave as the remaining portion of the oil the saturated acids and oleic acid triglycerides. In Table I is shown the composition of a number of oils in terms of the unsaturation of the fatty acids present. If the saturated acids and oleic acid could be removed, segregated oils would be obtained with the composition shown in Table II. Theoretically the segregated fraction of soybean oil should be fast-drying and nonyellowing and this has been borne out in actual practice. A suggested method for obtaining the desired fraction is to split the natural oil into fatty acids and glycerine, fractionally distill the fatty acids, and re-esterify with glycerine the unsaturated fraction. Otho M. Behr. *Canadian Chemistry and Process Industries* **24,** 345, 350 (1940). (Ed. Note—If such a method of treatment of soybean oil becomes industrially important as a source of a substitute for tung or chinawood oil, the remaining 40 per cent of oleic and saturated acids from the soybean oil should furnish a good soapstock.)

Soap Oil Properties

The properties of soaps made with individual oils or fats are of interest in showing how an oil can be expected to affect the properties of a soap as made from mixtures of oils and fats. Soap made from *cottonseed oil* collected as waste from a cottonseed refinery, is good but apt to be dirty in color. The product does not keep well. Saponification is rather difficult, the lye remaining in the body. The soap is of thin body but can be hardened by mixing in soda ash and sodium silicate. The soap is easily soluble and forms a quick, abundant, thick, greasy lather which is of medium lasting quality. It is high in detergent value and very suitable for use in pale laundry soaps.

Castor oil yields a soap on saponification with caustic soda, which requires very large quantities of salt for salting out. Addition of this oil improves lathering. The soap is very soft, very soluble, clear, and used in making cheap transparent soap. Castor-oil soap is relatively low in detergent value. Second-pressing *peanut oil* is used in making white soap. *Mahua oil* is a valuable soap-making oil native to India. The oil is greenish to yellow to white, according to the variety. Soap made with this oil has a soft body so that the oil is suitable for inclusion in laundry and cheap toilet soaps. R. G. Gupta. *Indian Soap J.* **6,** 312-21 (1940).

TABLE I—NATURAL OILS

Acids	*Tung Oil Per Cent*	*Perilla Per Cent*	*Linseed Per Cent*	*Sardine Per Cent*	*Hempseed Per Cent*	*Soybean Per Cent*
Clupanodonic etc.				15		
Eleostearic	85					
Linolenic		40.8	34.6	17.5	28.9	2.3
Total Fast-drying Oils	**85**	**40.8**	**34.6**	**32.5**	**28.9**	**2.3**
Linoleic		41.9	49.4	34.0	49.8	55.8
Total Drying Oils	**85**	**82.7**	**84.0**	**66.5**	**78.7**	**58.1**
Oleic	12.5	10.1	6.0	12.5	11.8	30.0
Saturated	2.5	7.2	10.0	21.0	9.5	11.9

TABLE II—SEGREGATED OILS

Acids	*Perilla Per Cent*	*Linseed Per Cent*	*Sardine Per Cent*	*Hempseed Per Cent*	*Soybean Per Cent*
Clupanodonic			22.5		
Linolenic	49.5	41	26.5	63	96
Linoleic	51.5	49	51	63	96

Chlorophyll in Fat Spoilage

Chlorophyll contains a reactive carbon atom which easily takes up and gives off hydrogen, the reduced form under absorption of light energy giving active hydrogen peroxide. The latter, unless decomposed by catalase, produces oxidative changes, oxidizing even chlorophyll itself. Various oils were tested for autoxidation, both with and without decolorization by adsorbents, in the presence of crude or purified chloropyhll solutions.

The autoxidation of pumpkinseed oil is greatly decreased by treatment with Clarite, and this is not much affected by the addition of a crude chlorophyll solution, whereas the addition of a purified solution brings the autoxidation of the treated oil practically to the level observed in the crude, untreated oil. The same is true even when the oil had been heated to 90° C. Poppy-seed oil undergoes autoxidation very slowly, but much more intensively if heated to 90° C. The decolorized oil autoxidizes much more when treated at room temperature than at 90° C. The addition of crude chlorophyll solution seems to prevent autoxidation, whereas that of a purified chlorophyll solution makes

the oil very sensitive to autoxidation. The difference in behavior is thought to be due to the presence of xanthophyll in the crude preparation. K. Taufel and R. Muller. *Biochem. Z.* **304,** 137-46 (1940); through Chem. Abs.

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Adsorption of Soap

In studying the mechanism of the detergent action of soap, it was desired to determine whether the soap is adsorbed on the goods and on the soiling particles in molecular or in micellar form. Electron-diffraction experiments on the adsorption of sodium stearate on thin nitrocellulose films established the presence of soap films formed by molecular adsorption. The adsorbed molecules stand vertically on the surface and form two-dimensional hexagonal crystals.

Films formed from solutions of the concentration 1:1000 probably consist of several layers of molecules, but more dilute solutions may possibly give unimolecular soap films. The adsorbed films could easily be washed off but the films were much harder to wash off after aging for several days or if the adsorption took place at 85° C. R. Brill and F. Rieder. *Angew. Chem.* **53,** 100-3 (1940).

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Sulfonated Arylstearic Acids

Sulfonation of arylstearic acids derived from oleic acid and cyclic organic compounds by means of the Friedel and Crafts reaction, takes place in the aromatic nucleus. Disodium sulfoethoxyphenyl stearate and disodium sulfoxylyl stearate were prepared in this way and were found to have excellent wetting power and about the same degree of stability toward calcium-resistance to 400-700 p.p.m. of calcium carbonate—as a number of commercial wetting agents. The penetrant properties of this type of compound are at a maximum at pH 4-6 and at a minimum in 1 per cent sodium hydroxide solution. Conditions can be adjusted so that either the mono or the di-sulfo compound is isolated. The monosulfo compounds have superior wetting power, but the calcium salts of the disulfo compounds are extremely soluble. A. J. Stirton, R. F. Peterson, and P. H. Groggins. Ind. Eng. Chem. **32,** 1136-7 (1940).

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Glycol and Glycerol

Ethylene glycol and glycerine can be quantitatively determined in the presence of each other with the use of methods based on their reaction with periodic acid. By using an oxidation with acid dichromate solution in conjunction with a periodic acid oxidation, solutions containing three polyalcohols may be analyzed.

A qualitative test to distinguish between glycerine and ethylene glycol is as follows: To about 2 cc. of sample solution add a drop of methyl red solution and neutralize carefully with dilute sodium hydroxide or dilute acid, leaving the solution just on the alkaline side of the indicator. To about 2 cc. of a solution of periodic acid add a drop of methyl red and adjust to the neutral point of the indicator, again leaving just on the alkaline side. Mix the sample with the periodate solution. If glycerine is present, the solution will turn pink immediately.

A method for investigating unknown solutions containing polyalcohols is outlined. The methods give good results on synthetic solutions of known composition and have been in practical use for several years. Nelson Allen, Harold Y. Charbonnier, and Robert M. Coleman. Ind. Eng. Chem. Anal. Ed. **12,** 384-7 (1940).

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Catalase as Anti-oxidant

Catalase acts as an anti-oxidant by decomposing hydrogen peroxide, which aids the oxidation of unsaturated fats. Addition of a liver catalase preparation to olive oil definitely inhibits the autoxidation, but the inhibitory effect is not parallel to the catalase activity, and may partly depend on some other factor present in the extract. This is actually corroborated by the observation that the antioxidant action of the extract persists even after the removal of the catalase. K. Taufel and R. Muller. *Biochem. Z.* **304,** 275-84 (1940).

Method for Fatty Acids

An improvement in the method for determining total fatty acids is suggested. Losses of fatty acids occur when the emulsion of the ethereal and aqueous layers are separated by a few drops of alcohol. Evaporation of water from the residue at 80° C. also causes losses of volatile acids. Losses of fatty acids are avoided by filtering the ethereal solution through a filter half filled with anhydrous sodium sulfate, washing the filter with petroleum ether, and evaporating the filtrate at a low temperature. A. Schiller. *Industria y quim.* **3,** 20-1 (1940); through Chem. Abs.

—— ♦ ——

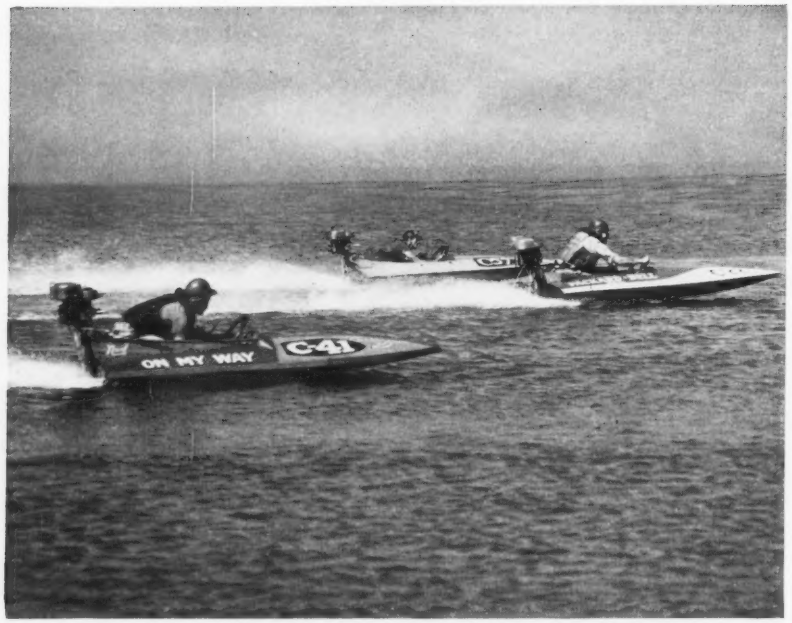
Acid Value Methods

To obtain accurate and reproducible acid values for an oil, the titration must be carried out with a sample that is in complete, stable and cool solution. This can be attained in almost all cases by dissolving five grams of the oil in 50 cc. of a mixture of one part by volume of alcohol and two parts by volume of benzene, and titrating with alcoholic potassium hydroxide solution. In very dark oils where the color change of the indicator is obscured, a two-phase method may be used. Phenolphthalein and an excess of alcoholic potassium hydroxide solution are added to the sample, then a saturated sodium chloride solution is added and the aqueous layer back-titrated.

These methods were checked potentiometrically. The above methods gave values different in many instances from the true acid values as obtained by the inflection point on the potentiometric curve. The methods are, however, reproducible and useful for control work. M. E. D. Jarrett. *J. Oil Colour Chem. Assoc.* **23,** 34-9 (1940).

—— ♦ ——

A new theory of perfume fixation suggests that cholesterol or a similar compound gives to musk, civet, tonquin and ambergris their fixative properties. Research along this line and on vegetable sterols is recommended. Joseph Charrier. *Soap, Perfumery & Cosmetics* **13,** 330-1 (1940).



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Products and Processes

Anti-perspiration Soap

A cosmetic soap supposed to prevent perspiration is prepared by adding 3-5 parts of chromic anhydride, 1-2 parts of methylene tetramine, and 1 part of aluminum acetate to 100 parts of sodium soap. Pick Ervin. French Patent No. 841,802.

Japanese Soap

Average analyses of 13 toilet soaps on the Japanese market were as follows: Soap 95.93 per cent. free alkali 0.029, free fat and unsaponifiable 0.55, chloride 0.62 and glycerine 2.13 per cent. Constants of the mixed fatty acids were iodine number 44.7, neutralization number 213.3, liquid acids 37.79, and solid acids 62.21 per cent. S. Kawai. *J. Soc. Chem. Ind., Japan* **43,** Suppl. binding 80 (1940).

Detergents from Mineral Oil

Apparatus is described and a process for the production of detergent aids which involves treating a low-boiling monoölefin with sulfuric acid to secure a product comprising alkyl sulfates, sulfo acids and unchanged sulfuric acid. The resulting acid and hydrocarbon phases are separated and the alkyl sulfates hydrolyzed in each phase. The resulting aqueous solutions are heated to concentrate the sulfo-acid compounds. These compounds are separated and extracted with an organic solvent such as isopropyl alcohol. Henry O. Mottern, to Standard Oil Development Co. U. S. Patent No. 2,192,713.

Non-Soap Hand Cleaner

Soaps and other cleansing agents are responsible for cases of industrial dermatitis. The application of protective hand creams is helpful. Dermatitis develops after continued exposure to soaps either because of an allergy or because of lowered resistance of the skin to irritation from the alkalies liberated on hydrolysis. A very effective abrasive soap-substitute consists of 45 parts of sulfonated neatsfoot oil, 45 parts of liquid petrolatum, and 10 parts of corn meal. Joseph V. Klauder. *Ind. Med.* **9,** 221-31 1940); through Chem. Abs.

Amide Washing Agents

Washing and emulsifying agents which can be used in neutral and even slightly acid baths and which yield no deposits in water of ordinary hardness, are obtained by causing primary or secondary amines containing at least one high molecular-weight aliphatic radical to react with polycarboxylic-acid compounds to form carboxylic acid amides containing at least one free carboxyl group in the molecule. Such amines may be prepared from fatty substances such as the acids contained in palm-kernel oil, coconut oil, soybean, oil, tallow, whale oil, tall oil, etc. Gerhard Balle, to I. G. Farbenind. A.-G. U. S. Patent No. 2,191,738.

Hydrocarbon Detergents

Apparatus is described and a method suitable for the production of wetting and detergent compounds by passing an organic substance such as a white oil or cetane in a fluid state counter-current to a gaseous mixture of sulfur dioxide and chlorine, and hydrolyzing with caustic soda. Wm. H. Lockwood and J. L. Richmond, to E. I. du Pont de Nemours & Co. U. S. Patent No. 2,193,824.

Cottonseed Oil Soap

In order to improve the quality of the soap prepared from soap stock obtained during the refining of cottonseed oil, solid fats may be added or direct hardening may be used. The direct hydrogenation of the soap has been carried out in the presence of water under increased pressure with nickel oxide and cupric oxide as catalysts. The results indicate that this type of hydrogenation is feasible and advantageous. Nickel oxide is a much more active catalyst than cupric oxide. M. S. El'gort and A. N. Grigor'eva. *Bull. univ. Asie centrale* **22,** 239-48; through Chem. Abs.

Silicated Soap

Kettle soap is used with at least 40 per cent its amount of sodium silicate and with an organic water-soluble colloidal dispersing agent such as a soluble starch in sufficient amount to render the soap and sodium silicate compatible. Sufficient sodium pyrophosphate or sodium hexametaphosphate is incorporated to induce normal sudsing. John R. Curzon, to Harris Soap Co. U. S. Patent No. 2,193,329.

Aminoaryl Sulfones

Valuable products used as auxiliaries in the textile industry, are obtained by causing reactive nitrogen compounds such as ammonia or amines to react with sulfones which contain in the benzene ring an interchangeable halogen atom. In an example, the sulfone obtained in an autoclave at 160° C. by the reaction of ethyl *alpha*-bromolaurate with sodium *para*-chlorobenzene sulfonate, is treated at 220° C. in an autoclave with dimethyl amine, and the reaction product is converted into a quaternary compound by treatment with dimethyl sulfate. J. R. Geigy A.-G. French Patent No. 841,506.

Artificial Ozokerites

Ozokerite has a homogenizing action on a wax-solvent paste, aiding in the prevention of crystallization at the surface of paraffin pastes. Two artificial ozokerites recovered from the products of the Fischer-Tropsch benzine synthesis showed this effect on crystallization and restrained evaporation of the solvent. They were practically as good as an especially high-grade non-acid bleached Polish earth wax or natural ozokerite. One of the artificial materials was tallowy, melting at 58° C., the other was hard, melting at 77° C. K. S. Nitsche. *Fette und Seifen* **46,** 391-7.

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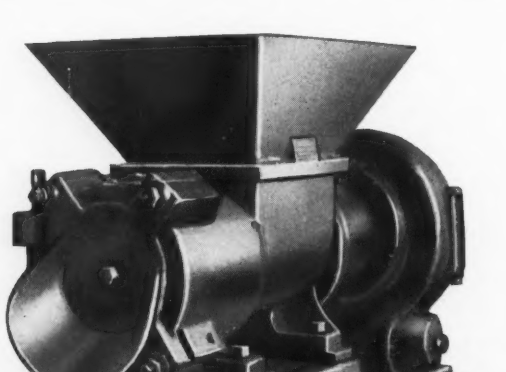

Placed after the dryer and after the mills this Preliminary Plodder serves several important purposes:

a—Storage space is reduced, because this machine discharges the soap in PELLET FORM. Pellets take up only one quarter the space required for soap in ribbon form.

b—These pellets hold moisture better than does soap in ribbon form.

c—The pellets do not pack in the hopper, and cause sweating.

d—Pellets do not bridge over the screw as ribbons do.

e—Foreign matter is screened out in this preliminary plodder, before it can do serious damage in the mills.

f—The Preliminary Plodder is used to break up damaged cakes, scraps and soap plugs from noses of plodders, etc.

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No. 2,206,758, Parasiticidal Preparation, patented July 2, 1940, by William P. ter Horst, Packanack Lake, New Jersey, assignor to United States Rubber Company, New York. A parasiticidal preparation containing as an active constituent a product of reaction of acetonyl acetone with ammonium thiocyanate in the form of a paste containing in addition a thickener, a wetting agent, and a hygroscopic agent.

No. 2,206,829, Soap Wrapper, patented July 2, 1940, by Lawrence W. Strattner, Mechanicville, New York, assignor to West Virginia Pulp and Paper Company, New York. In combination, a cake of soap and a wrapper of paper therefor in contact with the soap, said wrapper containing a filler comprising calcium sulfite in an amount sufficient to prevent substantial discoloration of the wrapper from alkali contained in the soap.

No. 2,206,975, Poison for Insects, patented July 9, 1940, by Walter E. Ripper, Hadersdorf-Weidlingau, Austria. Stomach poison for combatting insects and animals comprising minute individual particles of a toxic substance provided with a substantially water-insoluble edible organic coating non-repellent to the insect or animal and soluble in the digestive juices of the alimentary tract of the insect or animal, and selected from the group consisting of celluloses, hemicelluloses and naturally water-insoluble proteins.

No. 2,207,185, Insecticidal Materials, patented July 9, 1940, by Clarence Walter Wilson, Norco, California, assignor to California Fruit Growers Exchange, Los Angeles, California. A process for the preparation of an insecticidal material comprising reacting nicotine alkaloid and pectic acid in the presence of moisture in an amount of about 25 to 35 per cent based on the weight of pectic acid plus moisture.

No. 2,207,482, Insecticide, Fungicide, and Germicide, patented July 9, 1940, by Roy H. Ellis, Orlando, Fla. A dry, pulverulent insecticide, fungicide and germicide composition capable of being applied by dusting and comprising barium sulfide and tobacco, whereby upon application the barium sulfide gradually decomposes in the presence of natural or atmospheric moisture yielding barium sulf-hydrate and barium hydroxide, the decomposition product serving gradually to liberate nicotine from the tobacco.

No. 2,207,721, Spray Composition, patented July 16, 1940, by Gerald H. Coleman, Midland, Michigan, assignor to Dow Chemical Company, Midland, Michigan. An insecticidal spray comprising a non-corrosive organic solvent having dissolved therein as an active toxicent a compound having the formula R-O-X wherein R represents an aromatic radical and X is selected from the group consisting of the allyl and 2-chloro-allyl radicals.

No. 2,207,967, Paint and Varnish Remover, patented July 16, 1940, by William A. Bland, Primos, and Edmund F. Oeffinger, Aldan, Pennsylvania, assignors to E. I. du Pont de Nemours & Company, Wilmington, Delaware. Process of preparing paint, varnish, lacquer, and enamel removers which comprises dispersing an alkaline earth metal stearate in a liquid aromatic hydrocarbon to form a slurry, heating with constant agitation to a temperature of about 210 to 220° F., maintaining this temperature from 5 to 15 minutes, and while hot adding a mixture of beeswax and ceresin wax thereto and subsequently adding a lacquer solvent.

No. 2,208,253, Insecticidal Composition, patented July 16, 1940, by Albert L. Flenner, Robert B. Flint and Frank H. Kaufert, Wilmington, Delaware, and Louis Spiegler, Woodbury, New Jersey, assignors to E. I. du Pont de Nemours & Company, Wilmington, Delaware. A pest-control composition, useful for controlling fungi, insects, bacteria, and like organisms, which contains as an active ingredient a chelate cupric enolate.

No. 2,209,129, Plant Insecticide, patented July 23, 1940, by Hans Mengele and Hans Huber, Wiesbaden, Germany. A plant pest control composition containing as its essential active toxic ingredient a soluble alkali metal heavy metal salt of a polyphosphoric acid.

No. 2,205,394, Spray Composition, patented June 25, 1940 by Gerald H. Coleman and Clarence L. Moyle, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich. An insecticidal spray comprising a petroleum distillate having dissolved therein as the principal toxic ingredient a compound having the

$$—O—R—O—R—X$$
$$X_n$$
$$Y_m$$

wherein each R represents an alkyl residue containing not more than 3 carbon atoms, each X represents halogen, Y represents a member of the group consisting of hydrogen and alkyl radicals containing not more than 6 carbon atoms, n is an integer not greater than 5, and m is an integer not greater than 2.

No. 2,204,197, Insecticide, patented June 11, 1940 by Homer E. Whitmire, Richmond Heights, Mo., assignor to Shell Oil Company, Incorporated. An insecticide comprising, the reaction product of dichlorethyl ether and an organic cyanate at temperatures in excess of 100°C.

No. 2,209,184, Parasiticide from Terpenes, patented July 23, 1940, by Joseph N. Borglin, Wilmington, Delaware, assignor to Hercules Powder Company, Wilmington, Delaware. A parasiticide comprising a compound of the formula ROOCR'XCN in which R is a terpene radical, R' is a radical selected from the group consisting of aliphatic and aromatic radicals, X is an element selected from the group consisting of sulfur, selenium and tellurium and the XCN group is a substituent of the R' radical, and a diluent.

No. 2,209,291, Rust Removing Composition, patented July 23, 1940, by George Witty, Long Island City, New York, assignor, by mesne assignments to Frederick Le Pan, Hartsdale, New York. A rust removing composition, comprising phosphoric acid, zinc phosphate, gum arabic, manganese chloride, butyl propionate and water.

No. 2,209,454, Germicide, patented July 30, 1940, by Howard L. Guest, Oakland, California. A non-caustic, non-toxic germicide mixture for solution in water comprising $FeSO_4$ and $Fe_2(SO_4)_3$ in the ratio of one molecular weight of each.

No. 2,209,634, Detergent, pat-

(*Turn to Page* 123)

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New Equipment

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

730—Water Softeners

Permutit Co., New York, has just published a 32-page treatise on hot process water softening which describes the five types of deaerating and non-deaerating Permutit heaters for boiler feedwater treatment. The principle and function of each unit part are explained. Water conditioning filters, both vertical and horizontal, as well as electro-chemical feeding equipment, are described in detail. A brief section on the chemistry of water softening and corrective treatments is also included.

731—Dispenser Broadside

Ampion Corp., Long Island City, is currently distributing a broadside on the "Precision" line of liquid soap dispensers to sanitary supply jobbers. Ten types of soap dispensers, two tank systems and the "michrome" valve are illustrated and prices given.

732—Gyrating Screens

"Ro-Ball Stabilized Gyrating Screens," for sifting or screening wet or dry materials, are described in a new bulletin just released by J. H. Day Co., Cincinnati. Precision separations are made possible, the manufacturer feels, by special construction of the gyrating screens which is said to eliminate binding of the mesh openings of the screen cloth. Specifications for machines giving from two to five separations are included in the bulletin.

733—Lanolin and Woolfats

Lanaetex Products Sales Corp., Elizabeth, N. J., has recently published a folder entitled "Lanolin—Woolfats" which describes the chemical composition and properties of lanolin, as well as its use in soaps, detergents, polishes and other industrial applications.

734—Air Cleaner

U. S. Bottlers Machinery Co., Chicago, has just put on the market its improved Model E Z 2-Tube Air Cleaner for the removal of carton lint, dust, etc., from new containers received in shipping cartons. Improvements made in the compressor are said to insure a clean, oil-free air supply for the removal of foreign materials. A new mounting of the motor and compressor on a common base is designed to eliminate vibration and belt noises. Bulletin available on request.

Plan New Phosphate Plant

Monsanto Chemical Co., St. Louis, is currently making plans for construction of a phosphate manufacturing plant at Trenton, Michigan, approximately fifteen miles southwest of Detroit. A tract of 138 acres, known as the Berwick tract, has been purchased as a plant site. It is located a mile southwest of the Trenton business district and fronts on the Detroit river. The plant, which will go into operation in the summer of 1941, is Monsanto's eighteenth and the fourth in the Phosphate division of the company. Decision to locate the plant in the Great Lakes industrial area near Detroit was made by Monsanto, according to Edgar M. Queeny, president, after three years of study involving availability of the necessary raw materials, freight transportation costs and the closeness of consuming industries.

Form Machinery Corporation

Harry Pearlman and Irving H. Laskey, formerly with First Machinery Corp., New York, have recently formed Machinery & Equipment Corporation at 59 East 4th Street, New York, for the sale of new and rebuilt machinery and equipment for the soap, chemical and cosmetic trades and allied industries.

Sulfonation Products

Mixtures of higher alcohols or higher carboxylic acids are transformed into corresponding polyglycol ethers by treatment with an alkylene oxide. The ethers are sulfonated and extracted in the presence of water by means of a lower alcohol and an aliphatic hydrocarbon. I. G. Farbenind. A.-G. French Patent No. 842,184.

Analysis of Amines

In spite of the growing application of cationic surface-active agents in the textile industry there seems to be a lack of published literature on methods of analysis of such compounds. A procedure is given applicable to commercial products of the fatty acid amido-amine type. The methods consist essentially of isolating the amido-amine, hydrolyzing it into its fatty acids and amine constituents, and determining the last two. Directions are included for the determination of the acid used to render the products soluble, nitrogen as alkalinity, total active ingredients or amido-amine, free fatty acids, total fatty acids, condensed amine, and uncondensed amine. The methods with some modification may be applied to certain sulfonated detergents of the fatty acid-amide type. Ralph Hart. *Ind. Eng. Chem.*, Anal. Ed. **12,** 400-402 (1940).

Ladd Joins Hooker Sales

Roderick M. Ladd has just been appointed to the sales staff of Hooker Electrochemical Co., Niagara Falls, N. Y., as sales agent in the Metropolitan New York area.

Latex in Soap

To soap stock is added a homogenized emulsion or aqueous dispersion of rubber latex in amounts of 10-15 per cent. Casein or gum arabic may also be added to prevent the coagulation of the rubber latex. Alajos Zartler. Hungarian Patent No. 123,521; through Chem. Abs.

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Synthetic Fatty Acids

(*From Page* 37)

Separation of the fatty acids in this mixture shows that practically all fatty acids from C_7 to C_{22} are present. One fractional distillation gave the following result:

Fatty acids containing:

	Per cent
7 carbon atoms	7.35
8 carbon atoms	4.25
9 carbon atoms	5.70
10 carbon atoms	7.40
11 carbon atoms	6.20
12 carbon atoms	7.65
13 carbon atoms	8.30
14 carbon atoms	8.75
15 carbon atoms	9.00
16 carbon atoms	6.70
17 carbon atoms	6.25
18 carbon atoms	4.25
Over 18 carbon atoms	18.20

This entire series cannot be used in soap making, so these fatty acids are distilled fractionally in order to eliminate all the fatty acids under C_{10} and over C_{20}. Chemical inspection shows that there is little difference between natural fatty acids and these synthetic fatty acids of the same molecular weight, which are practically all fatty acids with straight chains. Only very small percentages of fatty acids with branched chains have been found in the fatty acids from paraffin oxidation.

The fractional distillation is made in the usual distillation plants under high vacuum and with superheated steam. It is a delicate process which requires exact control. About 20 per cent of the weight of the raw fatty acids remains in the still as a residue. This residue has a very high dielectric strength and can be used for electric insulation.

The fatty acid fraction that can be used in soap-making is a soft yellowish fat with the following properties:[15]

Solidification point	= 26.2C — (30 C)[1]
Odor	= practically none
Acid value	= 244.2 (239)[4]
Sap. value	= 247.2 (239.5)[1]
Average molecular weight	= 229.8 = $C_{12}H_{27}COOH$
Iodine value	= 4.9
Hydroxyl value	= 3.7
Naphtha insoluble	= 0.0%
Unsaponifiable matter	= 0.29%
Methyl esters:	
Acid value	= 0.0
Sap. value	= 233.1

The fractional distillation of the methyl esters shows that the fatty acid mixture had the following composition. The figures were obtained from two different sources.

	%	%
Caprylic acid, C_8	0.2[15]	0.4[21]
Pelargonic acid, C_9	1.6	2.1
Capric, C_{10}	4.1	5.0
Undecanic, C_{11}	8.0	7.3
Lauric, C_{12}	11.9	13.9
Tridecanic, C_{13}	13.5	16.3
Myristic, C_{14}	14.3	15.2
Pentadecanic, C_{15}	14.8	12.4
Palmitic, C_{16}	10.9	8.1
Heptadecanic, C_{17}	7.5	7.3
C_{18}	—	3.5
C_{19}-C_{21}	—	7.3
C_{22}	—	1.2
Fatty acids higher than C_{17}	13.2	

Through esterification, the lower fatty acids can be converted into a form which can be used in the perfume industry. But as practically no use has been found for the higher fatty acids, these are sent back to the oxidation tower.

References

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[4]Fischer, F. u. Pichler H., Ber. *72*, 327 (1939).

[5]Imhausen, A., Chemiker Ztg., *62*, 213 (1938).

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[11]Imhausen, A., Kolloid Zeitschr., *85*, 234 (1938).

[12]Wittka, F., see (1) page 15.

[13]See SOAP, *1939*, August, page 67.

[14]Wittka, F., Seifensieder-Ztg., *66*, 668 (1939).

[15]Jantzen, E., Rheinheimer, W. and Asche, W., Fette u. Seifen, *45*, 388 (1938).

[16]French Patent 832,546, 1937; 833,-064, 1938; Henkel & Co.

[17]Brit. Patent 478,317, 1936; Am. Patent 2,095,473, 1936; I. G. Farben Ind.

[18]DRP. 490,243, 1923; 543,109, 1929; I. G. Farben Ind.

[19]Brit. Patent 337,130, 1929; I. G. Farben Ind.

[20]Wittka, F., see (1), page 73.

[21]Rennkamp, F., Hoppe-Seyler, *259*, 235 (1939).

Fatty Acid Purification

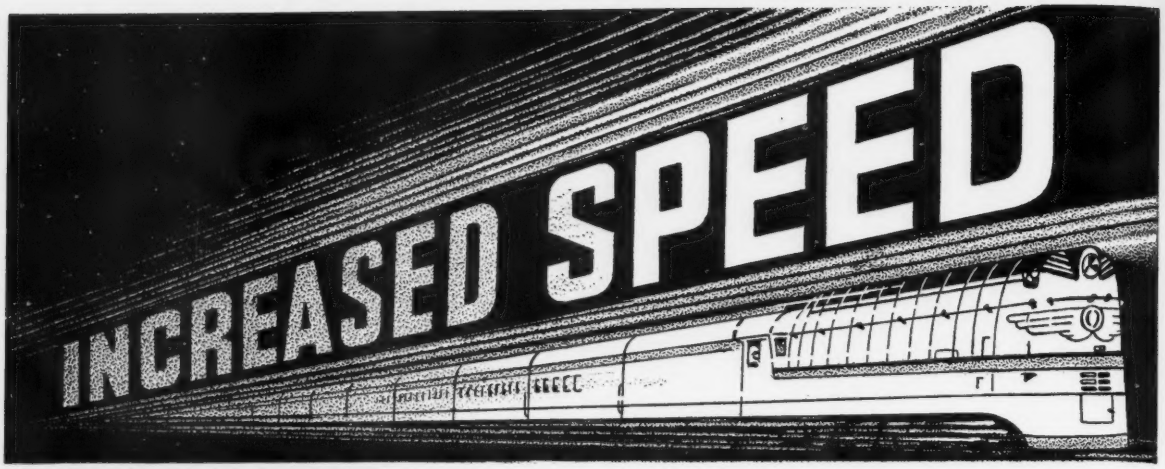
As a step in purification, oxidized and polymerized material can be removed from unsaturated fatty acids or glycerides by chromatographic adsorption through silica gel. Some fractionation of the acids according to unsaturation can be effected, but the separation is not sharp enough for separation purposes. The principle of reducing the solubility of the potassium soaps of solid acids in ethyl alcohol by increasing the potassium-ion concentration, can be applied in order to separate solid and liquid acids, i.e. to remove saturated acids from crude oleic acid. If it is desired to remove traces of liquid acids from crude saturated acids, these are not neutralized before crystallization but are precipitated directly by treatment with potassium acetate in ethyl alcohol. Viscosity determinations may be preferable to the iodine value in controlling the purity of oleic acid, since the viscosity is noticeably increased by the presence of small amounts of saturated acids. H. Kurz. *Fette und Seifen* **46,** 397-400.

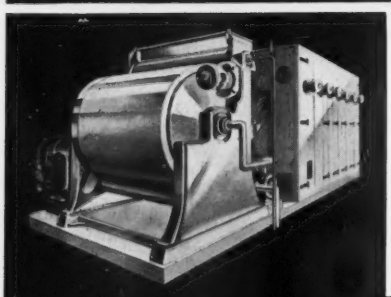
Fatty Acid Esterification

Lauric acid, stearic acid, and oleic acid were each esterified almost completely with glycerine in three hours at 230-240° C. The glycerides formed from lauric and oleic acids consisted chiefly of mono- and diglycerides with a small amount of triglyceride, but those from stearic acid consisted mainly of di- and triglycerides. Seizi Kawai and Hiroso Nobori. J. Soc. Chem. Ind., Japan **43,** Suppl. binding 59 (1940).

Acetyl Value

One hundred grams of oil are heated at 75° C. with 3-5 grams of *para*-toluene sulfonic acids; 70 cc. of white spirit are added and the solution is heated in a Dean-Stark apparatus for 80 minutes at 150-180° C. The acetyl value is given by $28n$, where n is the volume of water collected. P. M. Bogatyrev, S. M. Dridze and N. A. Roshnova. *Org. Chim. Ind.* (U.S.S.R.) **6,** 558-9; through Chem. Abs.





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Ceylon Citronella

(*From Page* 33)

north of Matara. Most of the grass in that region comes from well-kept plantations.

2. A smaller section north of Weligama. The grass there occasionally grows semi-wild on old and neglected plantations which have not been weeded out properly, with the result that all kinds of citronella grass are harvested and distilled.

The quality of oil produced in the two regions is very similar except for the specific gravity which is sometimes lower in the Weligama oil. The reason, most likely, is the somewhat different quality of grass grown in that region.

Planting: Lenabatu grows on poorer soil, permits more frequent cutting and plantations have a longer life span than those of the maha pengiri which is grown in Java. All plantings are owned by Singhalese and range from scattered small patches of one-half acre up to three hundred and more acres on the very large estates which are in the hands of quite wealthy men. Sometimes the latter rent out parts of their fields and stills to small producers under a share crop arrangement, whereby the owner receives one-sixth of the oil yield obtained while the share cropper retains five-sixths, from which he must pay all expenses such as labor and so forth. All the grass is cultivated except the small quantities of semi-wild grass growing on old, neglected plantings not carefully weeded out during periods of low oil prices. Even poor soil is suitable for the growing of lenabatu, which is quite a hardy plant; slopes of hills are usually preferred. Previous to planting the soil is prepared by burning old grass and weeds and by subsequent hoeing.

For planting, older plants are divided and set out 1½ feet apart. This work is done during the two rainy seasons (monsoon seasons) which last from the end of May to the end of August and from November to January. Depending upon the quality of soil and amount of rainfall, from eight to twelve months are required until the young plants reach a height of 4 to 5 feet, tall enough to be cut. Three cuttings are possible each year, the period of harvest depending upon the time of planting. The harvest really continues almost all year round but there are three main cutting seasons, i.e., March to April, June to July and November to the middle of January. The grass is not cut during spells of rain because it ferments while lying in the fields before distillation and, furthermore, is too wet for proper distillation. The cutting is done by women and young girls with sickles. The cut grass is left in the fields to dry. This may require from one to three days, depending upon sunshine and atmospheric moisture conditions. The dried grass is subsequently bundled, sometimes stacked up in the fields for further drying, and finally transported in bullock carts to the nearby distilleries.

The planting must be weeded out annually and should be fertilized biannually with the ashes of distilled and burned citronella grass. The more frequently fertilized, the better for the planting. If well taken care of, a plantation may last up to fifteen years, when it must be replanted because the yield of grass and oil diminishes considerably after the tenth year and the planting finally becomes unprofitable. Some citronella plantings are said to be much older than fifteen years; some natives even mentioned fifty years, but this claim seems rather doubtful.

Yield of Oil: Lenabatu grass contains about 0.4 per cent of essential oil. The yield of grass per acre is, of course, variable and depends entirely upon its condition and age. On the average it amounts to about 8 tons of grass annually, which would mean about 70 pounds of oil, calculating upon a yield of 0.4 per cent. The maximum yield of a plantation is obtained in the third year, when it amounts to 80 pounds of oil per year and acre; after the fifth year the yield begins to diminish and it is estimated that the average yield of a plantation between five and fifteen years is only about forty pounds per year per acre.

Distillation: The stills employed in the citronella regions of Ceylon are comparatively modern and efficient. They are not quite as advanced as some employed in Java but undoubtedly far superior to the stills used in the south of India for distilling oil of lemongrass. The Ceylon citronella stills are usually housed in small buildings or beneath a protruding shed. Each distillation post of the better type is quite an efficient small manufacturing unit. A separate steam boiler generates direct steam. The stills, constructed of heavily galvanized iron, are usually 8 feet high and 4½ feet wide. Three-fourths of all Ceylon citronella stills consist of this standard type while the rest are much larger, 18 feet high and 6 feet wide. Two stills, working alternately, are usually connected with one condenser; while one still is being discharged and recharged, the other one is in operation. The condenser is inserted into a rectangular concrete water basin imbedded in the ground. The Florentine flask, where oil and water separate, and an oil container are sunk into the ground and walled in. An underground passage leads to this small chamber which is locked in order to prevent theft of the oil by the working crew.

Only the proprietor or the foreman has access to the oil. The diagram herewith shows the plan of a typical Ceylon citronella oil distillery.

The charge of dried grass is about one-half ton for the standard size still; distillation of one charge takes six hours. This seems rather long and might well be one of the causes of the relatively low total geraniol content of the Ceylon oils. We shall discuss this problem more thoroughly in a forthcoming study on Java citronella oils. The exhausted, sun-dried plant material serves as fuel for the steam boiler; the ashes are used for fertilization of citronella plantings.

Economic Set-up: In the technically more advanced distilleries, the oil is usually handled with greater care; it is decanted, filtered and properly stored. The estates producing larger quantities may sell their lots directly to the exporters, while the numerous lots distilled by the smaller producers are handled through middlemen or field brokers who in the transaction gain about 1 to 2 rupees per bottle of oil (one and one-half pounds). In many cases the smaller operators are financed by middlemen who, charging interest, may make quite a handsome profit. The leading Ceylon exporters have their purchasing agencies in Galle or Matara, buying from the native producers copra, fiber, cinnamon, oil of citronella and other products of the country.

The purchasing of oil presents many difficulties because the manager of the agency, though no chemist, is confronted with the delicate task of buying each day numerous small lots brought in by the field brokers. The oil must be examined immediately in order to arrive at a quick decision and, therefore, the analytical tests must be reliable, quick and so simple that they can be carried out even by a layman. These consist of the Schimmel solubility test and a test for the presence of alcohol and of the determination of specific gravity which, at room temperature (about 28° C.), should be around 0.900 or higher.

If the lot is accepted, the field broker is paid in cash or credited against advanced loans. If the lot is refused, the native field broker most likely offers it to a competing exporter in a neighboring store. During these dealings the craftiness of oriental business comes into play. Frequently the intermediaries succeed in playing the competing exporters against one another, especially when one of the exporters is short of oil, and it is surprising how well the intermediaries and competing shippers know the requirements, commitments and stocks of their competitors.

After purchases are completed, the numerous small lots are bulked in the storehouses of the exporters' branch offices in Matara and Galle. Here they are stored in tanks until the oil becomes clear enough to be easily filtered. The impurities settle to the bottom and frequently this decantation is so effective that filtration becomes unnecessary.

Upon aging the oil is liable to undergo certain changes, for instance, gravity increases, while solubility in 80 per cent alcohol decreases. Genuine oils should remain soluble for about three months. The color, too, changes, especially when exposed to light and air. Frequently it ranges from yellowish to greenish.

As a rule, the exporters standardize their bulkings according to orders from abroad. The oil is finally shipped in galvanized iron drums. Shipping ports are Galle, Matara and especially Colombo, where most of the exporters have their main offices. Some of the leading exporters have their own simple testing laboratories but in case of doubt about the quality, a sample of the lot is submitted to the city analyst of Colombo. So far there exists no Government control, and the matter of purity and quality is merely a matter of contract between the exporters and the buyers abroad.

This leads us to a most important problem. Ceylon citronella oil is marketed in two grades:

1. The so-called "estate" oils, which are usually pure. Estate oils are produced by the large distilleries and by the native owners of large estates, from which fact they derive their name. Such oils are generally sold on a basis of 60 per cent minimum total geraniol content. The quantities of estate oil exported amount to only about 5 per cent of the total oil of citronella exported from Ceylon.

Purchasing these pure oils from the estates in larger quantities is easier and far more satisfactory for the shipper than buying numerous small lots from smaller producers through intermediaries who frequently are not altogether reliable. Besides, the exporters often have close personal connections with some of the large estate owners whom they have known for years as reliable suppliers.

2. The so-called "ordinary" or "market" or "f.a.q." (fair average quality) oils. These lots may be produced on larger estates but they consist usually of bulkings of many small parcels purchased through middlemen. This oil contains up to 7 and more per cent of kerosene or petroleum; it is cut down to the extreme limit permitted by the so-called "Schimmel solubility test," upon which most contracts are based as far as quality is concerned. About 95 per cent of the total exports of Ceylon citronella oil consists of this f.a.q., ordinary or market quality.

Yet, the difference between the price of the estate oil and the ordinary oil is very slight, amounting to only about 2 cents (U.S. currency) per pound. Evidently this is a very unhealthy condition and one of the main reasons why the Ceylon oil has suffered so much lately from the competition of Java citronella oil, the purity of which is guaranteed by very strict Government control.

(*To be concluded.*)

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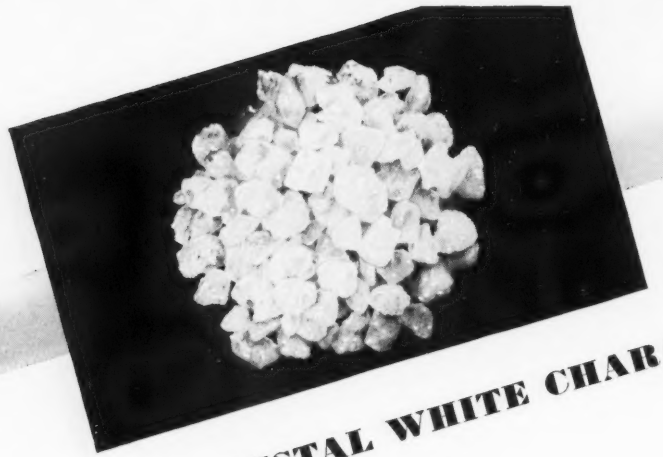

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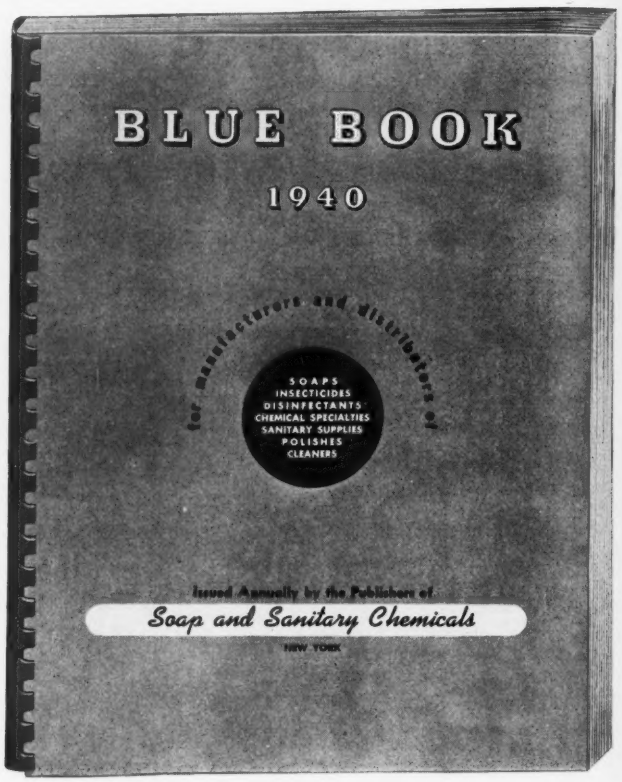

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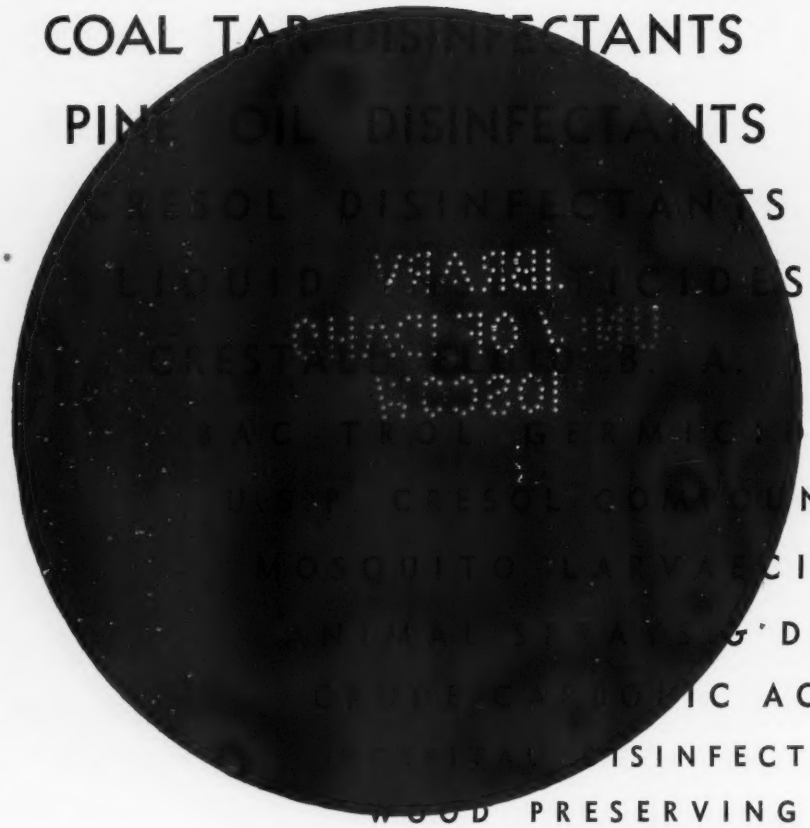

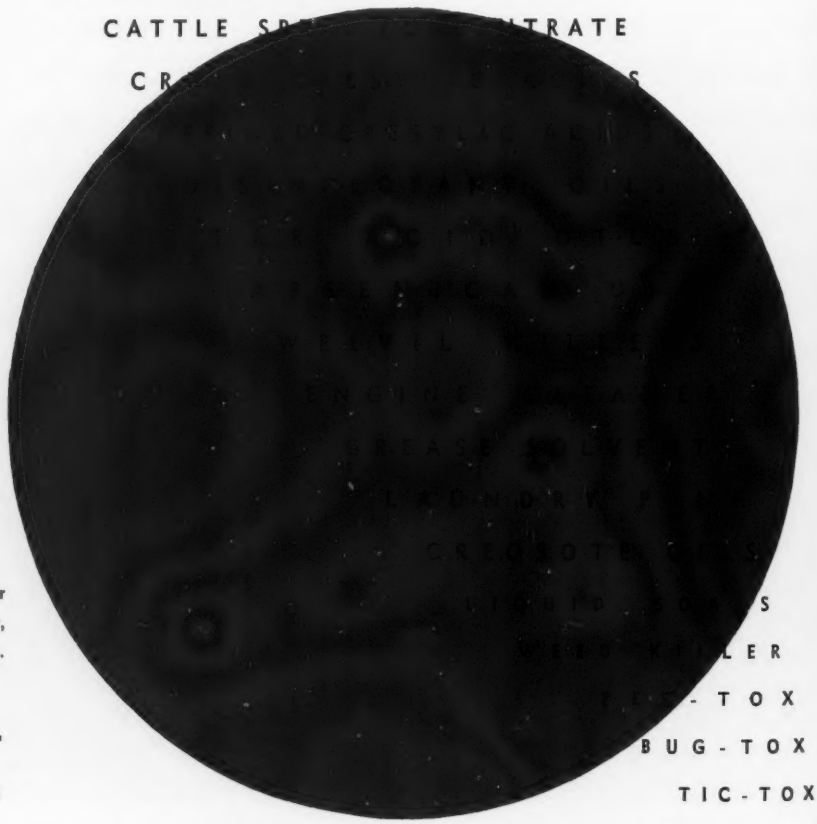

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BUG-TOX

TIC-TOX

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Sanitary Products

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

THE 1940 insecticide season has been a keen disappointment to say the least. Sales of all types of insecticides have been considerably below normal. That it has been a situation beyond the control of the manufacturer is generally agreed. A cold, late spring retarded insect development and the sale of insecticides suffered as a consequence. We believe that this condition was general and that few manufacturers escaped.

In the 1940 season, we believe that there is a lesson which the majority of insecticide manufacturers might take to heart. As far as we can judge, prices for household insecticides, particularly the liquid sprays, were lower during the season now drawing to a close than ever before. And this price rule has not applied to shoddy goods. Some of the best sprays on the American market have been selling retail for less than twenty-five cents per pint. Obviously, attempts to boost volume, and to meet and beat competition are the reasons behind these low prices. This policy may have been effective from a competitive angle, but certainly it has been a complete failure this year as far as volume is concerned.

We feel that the 1940 season tends to show that manufacturers are placing too much emphasis on price in selling household insect sprays. We believe that it shows the futility of trying to force sales by low prices when other factors determine the state of the market. We feel that the average housewife will buy an insecticide when she needs it and at no other time, irrespective of price, and that the difference in total volume of sales with a pint price at twenty-five cents as against thirty or thirty-five cents will always be negligible. In short, we do not believe that these low prices, which leave little or nothing in the business for the average manufacturer, are an appreciable factor in increasing volume. And accordingly, it would seem to us that manufacturers should begin to look elsewhere than to low prices for ways and means to increase volume and to make themselves a fair profit on their fly spray sales.

WHEN you buy a liquid insecticide, choose one with an "AA" rating, recommends the College of Agriculture of the University of Wisconsin to food factories, dairy and cheese plants, and others in that state. Entomologists at Wisconsin urge buyers to look for the grade rating on the container, and they explain exactly how fly sprays are rated and what the ratings mean. They tell how the ratings fit in with the standards for insect sprays of the National Bureau of Standards.

When an outstanding university, such as Wisconsin, urges buyers to be guided by grade ratings in choosing an insect spray, it carries a significance to the insecticide industry which cannot be ignored. It means that this recommendation, initiated by Wisconsin entomologists, is bound to spread elsewhere to create a demand that all fly sprays carry grade ratings on their labels. For manufacturers who do not now rate their sprays, it is something to think about.

What Standard for STOCK SPRAYS?

By Dr. J. L. Sherrick
Baldwin Laboratories, Inc.

WHEN the excellent work of standardization in the testing and grading of household insecticides brought about through the efforts of the National Association of Insecticide and Disinfectant Manufacturers is considered, it seems that something might be done to accomplish a similar standardization in the testing and grading of those insecticides used for the protection of farm animals against insect attack.

The terms, "Stock Spray" and "Cattle Spray," have been loosely applied to a large variety of spray insecticides used about the barn and dairy and, due to a lack of standardization and grading, many of these sprays are nothing other than cheaply made household insecticides. Among those who have made an effort really to ascertain the facts, it seems to be the consensus of opinion that an insecticide, made up with light oil, (30-35 viscosity), such as is suitable for household insecticide, is not suitable for use directly on the body of an animal. Such light oils are very apt to cause burning and injury of the animal's hide.

Reserving the term to insecticides suitable for direct application to the bodies of animals, a "Cattle Spray" must have certain properties not required of a household insecticide. Although good knock-down and kill are important, insect repellency is of even greater importance, if the material is to perform its function of protecting the animal from insect attack during the daylight pasturing hours. Furthermore, the base oil as well as the other ingredients should not stain the animal's coat or cause injury to the animal when applied in dosages adequate for insect control.

Much of the work (1, 2, 3, 4) reported on stock and cattle sprays has been carried on by those supplying raw materials in the form of toxic ingredient concentrates to the stock spray manufacturer. The knowledge thus available may be excellent, but, in the light of conflicting claims, there is always the feeling that such information may be colored by self interest. By such a statement it is not necessarily meant to imply any willful misrepresentation, but we all know how prone we ourselves are to over-emphasize data favorable to our own thesis.

The desirability of some standardized testing procedure for adequate grading of cattle sprays becomes evident when a critical survey of those available on the market is made. From our own observations and the work of others (1, 5), we must conclude that many of them have been very haphazardly formulated. It would seem that in many cases cattle sprays have been formulated without any special study of the problem and assuming that information obtained in work with household insecticides is directly applicable to such cattle sprays. This is in spite of the fact that it has been known for years (6) that the nature of the base oil affects the efficiency of certain toxic ingredients.

We have had occasion to study such formulation of cattle spray and, although, we have not tested the use of all toxic ingredients, activators and repellents, we felt that our general results, with the test methods used, might contribute somewhat toward a better understanding of the factors involved and toward a possible standardization of test methods.

Base Oils: The wide range in properties of base oils, used by the various manufacturers, indicates either considerable disagreement as to what is desirable or a careless disregard of any tests to establish such desirability. In general, it seems that a light oil (Viscosity 30-35 Saybolt seconds at 100° F.), such as is used in household insecticides, is apt to cause burning of the animal's hide because of its solvent and penetrating powers, while a very heavy oil of high boiling point may cause trouble by blanketing the animal's hide for too long a time. The consensus of opinion by those who have studied the matter (1, 4, 6) seems to favor a neutral oil with a viscosity of from 45 to 55 Saybolt seconds at 100° F.

It is known that the viscosity and body of the oil have an influence upon the killing power of certain toxic ingredients. It seemed desirable, therefore, to conduct our tests on the formulae made up in each of three representative types of oil.

	Light	*Medium*	*Heavy*
Viscosity, Saybolt Secs. 100° F.	35.2	47.2	73.4
A. P. I. Gravity, 60° F.	49.0	37.3	33.5
Boiling Range, °F.	401-496	518-680	540-711
Flash Point °F.	185	290	350
Fire Point, °F.	200	330	405
Sulfur, %	0.005	nil	trace
Unsulfonatable Residue	98.7	84.0	79.0

Test Sprays: In this work, no attempt was made to test any toxic ingredient through an extended range of concentrations. The formulae were made up with a selected number of toxic concentrates with the idea of finding the best formulation from those ingredients within a given range of cost of production.

Being interested in presenting test methods and general results rather than evidence for or against any material, we are giving the formulation in code letters. In this code, A, B, and C refer to main toxic ingredients, D, E, and F to activators and repellents.

TABLE I
Formulation of Cattle Sprays

Formula Number	*Gallons per 100 Gallons of Spray Ingredients* A	B	C	D	E	F	Base Oil
1	2.65	—	—	1.00	0.20	—	96.15
2	3.00	—	—	3.00	—	—	94.00
2A	3.00	—	—	4.50	—	—	92.50
2B	3.14	—	—	3.50	—	—	93.36
3	1.82	0.36	—	3.64	—	—	94.18
4	—	—	2.00	—	—	0.50	97.50
5	—	3.70	—	5.55	—	—	90.75
6	2.00	—	1.50	—	—	—	96.50
7	2.00	—	1.00	2.00	—	—	95.00
8	2.00	—	—	—	—	0.50	97.50

used. New grey bogus paper was used for each test and, between tests, the walls and ceilings of the chamber were cleaned twice with alcohol-acetone mixtures, a fresh clean cloth being used each time.

It is apparent from an examination of the results of Peet-Grady tests that the base oil has considerable influence upon the toxicity, particularly, with certain ingredients. If we consider the results obtained with sprays made up in light oil (35 Viscosity) as normal, although, all of these sprays maintain their killing power in medium oil (47 Viscosity), the ten minute knock-down is no longer adequate with sprays No. 4 and 5. When we consider the results with the use of heavy oil (73 Viscosity), all sprays show a lower kill except those made with combinations of ingredients A and D (Table I).

TABLE II
Peet-Grady Tests of Cattle Spray

Spray No.	*Light Oil 35 Viscosity*		*Medium Oil 47 Viscosity*		*Heavy Oil 73 Viscosity*	
	Per Cent Knock-down	*Per Cent Kill Adjusted*	*Per Cent Knock-down*	*Per Cent Kill Adjusted*	*Per Cent Knock-down*	*Per Cent Kill Adjusted*
	99.7		99.5		97.7	
1		52.4		55.0		45.0
	100.0		99.7		98.8	
2		57.6		54.2		50.2
	99.9		99.7		99.5	
2A		54.7		52.0		59.6
	100.0		99.5		99.3	
2B		56.7		54.0		55.0
	99.7		99.5		95.2	
3		37.9		43.5		35.7
	97.9		65.7		12.7	
4		57.7		50.7		19.8
	99.6		85.5		34.3	
5		57.3		54.2		25.4
	99.9		99.3		97.4	
6		55.6		54.4		35.6
	100.0		99.1		97.3	
7		49.7		50.8		33.0
	100.0		98.5		96.6	
8		60.8		68.0		49.9

Note: Kill adjusted to a 60% kill for the Official Test Insecticide.

Repellency: In view of the influence of oil body and viscosity on toxicity it might, indeed, be well to examine any formulation of cattle spray to determine if there may not be some similar influence of oil base upon repellency.

There has been considerable work done on measuring repellency of cattle sprays, both, in the laboratory and in the field. The laboratory methods used have not been very satisfactory and it has been assumed that field tests are essential. Such field tests may, indeed, be necessary for final proof of findings, but requiring, as they do, a herd of cattle and summer weather, they place too great a limitation on our investigations. For this reason every effort should be made to develop or adopt some suitable laboratory method. Of the various laboratory methods proposed, the "Sandwich-Bait" method of L. B. Kilgore (7) seems to offer most promise.

In this "Sandwich-Bait" method, quoting from Dr. Kilgore's summary, "A laboratory procedure has been developed for evaluating liquid materials soluble in alcohol as insect repellents using the housefly

as the test insect. The method consists in

(a) Preparing uniform baits using brown molasses as the lure;

(b) Thwarting the attack of flies when the baits are exposed to them in a cage by superimposing on the bait a porous paper cover impregnated with the material to be tested to form a sandwich;

(c) Introduction of the chemical citronellol as a standard insectifuge."

Preliminary Repellency Tests: In these preliminary tests we first made an effort to follow rather closely the method of Dr. Kilgore in using citronellol as a yardstick. The various sprays were made up by taking the formula concentrations (Table I) of toxic and repellent ingredients in alcohol. We quickly came to realize, however, that we could not afford the time to evaluate the repellency of the large number of formula, which we wished to study, with the various concentrations of citronellol. It seemed advisable rather to establish the order of repellency of the formulae themselves.

In the first tests of these alcoholic solutions concentrations representing formula No's. 1, 2A, 3, 4 and 5 were compared. By observation as the test progressed it was not difficult for the operator to properly place the order of repellency. However, the photographs of the feeding flies served as permanent records and facilitated the counting of the flies forcheck observations. In this test the order of repellency was established as:

5—3—1—2A—4

the repellency increasing from 5 to 4. The evidence was not sufficient to distinguish definitely between 2A and 4.

In the second test, we again used 2A and 4 and compared these with sprays 6, 7 and 8. The order of repellency here was found to be:

7—2A—8—6—4

If we combined the two series we have the following order:

5—3—1—7—2A—8—6—4

the repellency increasing from 5 to 4. The position of 7 was not, however, definitely established.

Having investigated the repellency of the various ingredients made up to formula concentrations in alcohol, we felt considerable misgivings as we had in the meantime found the nature of oil used in cattle sprays to have a great influence on the knock-down and kill as determined by the Peet-Grady method. It seemed likely that the oil might have a similar influence on repellency. It, also, seemed desirable to modify the test in such a way as to make possi-

TABLE 3
Sandwich-Bait Tests
Cattle Sprays—47 Viscosity Oil

Picture No.	*Time Elapsed*	*Number of Flies Feeding on Cattle Spray Bait Numbers* 5	4	1	3	2A	*Remarks*
2	0 hr.—51 min.	11	0	1	0	3	
4	1 hr.—10 min.	11	3	0	4	1	
7	1 hr.—30 min.	17	5	0	0	0	
10	1 hr.—50 min.	15	20	0	10	1	
12	2 hr.—10 min.	8	12	6	5	3	
14	2 hr.—25 min.	6	12	3	9	1	
17	2 hr.—46 min.	9	6	0	5	0	
19	3 hr.— 0 min.	18	8	1	1	6	
Sub Totals		95	66	11	34	15	Bait 5 exhausted
22	4 hr.—30 min.		13	8	8	5	
25	4 hr.—45 min.		18	18	2	9	
27	5 hr.— 0 min.		22	17	4	6	
Sub Totals			119	54	48	35	Bait 4 exhausted
28	5 hr.—10 min.			27	4	2	
30	5 hr.—30 min.			20	5	9	
Sub Totals				101	57	46	Bait 1 exhausted
31	5 hr.—40 min.				17	9	
32	5 hr.—50 min.				15	9	
33	6 hr.— 0 min.				28	14	
Totals					117	78	Bait 3 exhausted

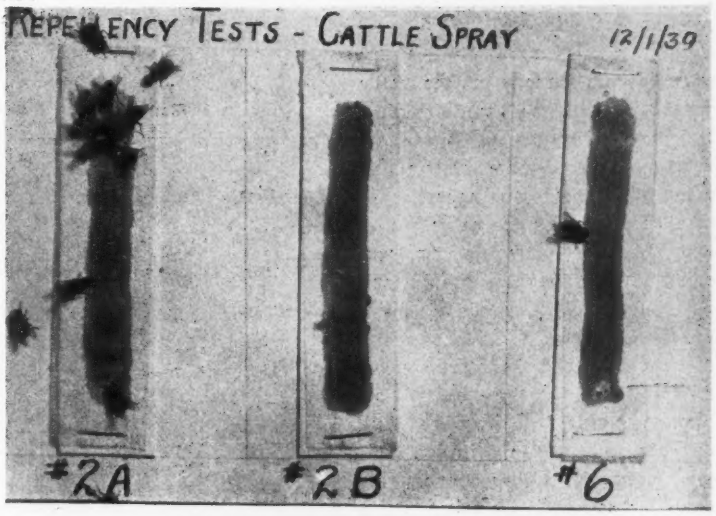
TABLE 4
Sandwich-Bait Tests
Cattle Sprays—47 Viscosity Oil

Picture No.	*Time Elapsed*	*Number of Flies Feeding on Cattle Spray Bait Numbers* 8	3	7	6	2A	*Remarks*
3	1 hr.—45 min.	13	4	1	3	0	
4	2 hr.— 0 min.	17	3	2	0	2	
5	2 hr.—56 min.	23	18	11	1	7	
Sub Totals		53	25	14	4	9	Bait 8 exhausted
6	3 hr.—11 min.		34	15	1	0	
7	3 hr.—30 min.		32	11	1	0	
Sub Totals			91	40	6	9	Bait 3 exhausted
9	3 hr.—37 min.			11	20	0	
10	3 hr.—48 min.			19	30	1	
Sub Totals				70	56	10	Bait 7 exhausted
11	3 hr.—57 min.				35	10	
12	4 hr.— 5 min.				40	12	
13	4 hr.—15 min.				16	12	
14	4 hr.—28 min.				15	15	
Totals					162	62	Bait 6 exhausted

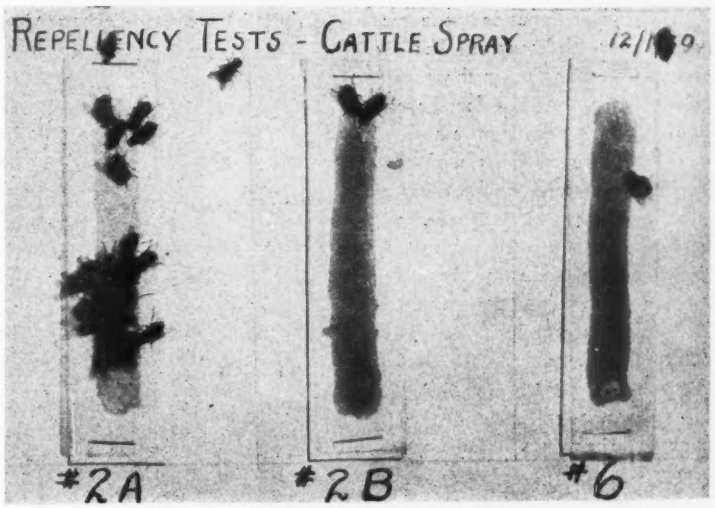
SANDWICH-BAIT TESTS

Time-lapse photographs

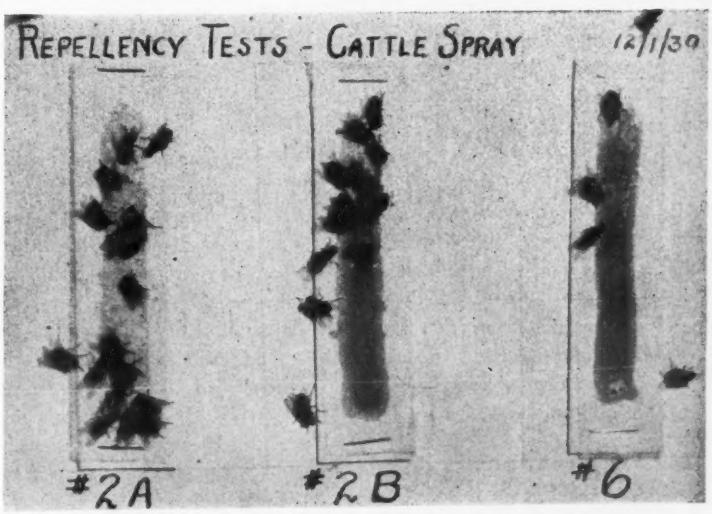
Cattle Spray Heavy Oil
(73 viscosity)



No. 1 . . . After 1 hr. 20 min.



No. 4 . . . After 2 hours.



No. 7 . . . After 2 hrs. 30 min.

ble the direct comparative testing of competitive sprays whose exact composition was unknown.

We first tried dipping the cover papers directly in the cattle spray, but with the use of medium and heavy viscosity oil sprays, it was found that too much material was taken up by the cover papers. We then tried diluting the cattle sprays with an equal volume of petroleum ether. In this way by dilution and by reduction of the viscosity considerably less material was taken up by the cover papers and the preferential evaporation of the ether then left behind something at least approaching the cattle spray before dilution. This method produced cover papers that could be satisfactorily tested and a complete series of tests was made with sprays compounded with medium oil and with heavy oil. The cover papers were hung up in the dark for twenty hours to allow for the evaporation of the petroleum ether.

Repellency Tests with Cattle Sprays: As before, comparative tests for repellency were made using sprays made up with medium and with heavy oil and using the dilution method of preparing the cover strips. The order of repellency was apparent to the operator as the test progressed. However, time-lapse photographs were taken and the files counted to convert the evidence to a numerical basis.

Combining the data in Tables 3, 4 and 5 we have the following order of repellency for the Cattle Spray formulae compounded in 47 viscosity oil:

5—4—1—8—3—7—6—2A—2B

the repellency increasing from 5 to 2B.

Combining the data in Tables 6, 7, and 8 we have, for the cattle sprays made up in 73 viscosity oil, the following order of repellency:

5—3—1—4—8—7—2A—2B—6

the repellency increasing from 5 to 6.

It is interesting to compare the orders of repellency obtained with the two base oils and with the alcoholic solutions.

Base	*Order of Repellency*
Alcohol	5—3—1—7—2A—8—6—4
Medium Oil, 47.2 Viscosity	5—4—1—8—3—7—6—2A—2B
Heavy Oil, 73 Viscosity	5—3—1—4—8—7—2A—2B—6

TABLE 5
Sandwich-Bait Tests
Cattle Sprays—47 Viscosity Oil

Picture No.	*Time Elapsed*	*Number of Flies Feeding on Cattle Spray Bait Numbers* 4	1	8	2A	2B	*Remarks*
12	2 hr.—45 min.	14	6	1	1	0	*
Sub Totals		14	6	1	1	0	Bait 4 exhausted
13	3 hr.—17 min.		25	5	8	0	
14	3 hr.—39 min.		9	6	2	1	
15	3 hr.—53 min.		17	10	2	1	
Sub Totals			57	22	13	2	Bait 1 exhausted
16	4 hr.— 9 min.			8	3	1	
17	4 hr.—24 min.			8	7	2	
Sub Totals				38	23	5	Bait 8 exhausted
18	4 hr.—40 min.				21	4	
19	4 hr.—55 min.				12	3	
21	5 hr.— 4 min.				35	7	
Totals					70	19	Bait 2A exhausted

* Bait 4 practically exhausted over noon hour.

TABLE 6
Sandwich-Bait Tests
Cattle Sprays—73 Viscosity Oil

Picture No.	*Time Elapsed*	*Number of Flies Feeding on Cattle Spray Bait Numbers* 5	3	1	2A	4	*Remarks*
2	1 hr.	9	2	1	0	4	
3	1 hr.—30 min.	30	7	2	0	2	
4	2 hr.	17	8	12	1	3	
6	2 hr.—30 min.	26	11	12	1	3	
Sub Totals		82	28	27	2	12	Bait 5 exhausted
7	3 hr.		24	9	0	1	
8	4 hr.		23	17	0	0	
9	4 hr.—30 min.		18	12	1	1	
11	5 hr.—30 min.		23	5	7	2	
12	6 hr.		10	9	4	1	
Sub Totals			126	79	14	17	Bait 3 exhausted
14	7 hr.			5	5	0	
15	7 hr.—30 min.			3	6	2	
Totals				87	25	19	Bait 1 exhausted

The order obtained with alcoholic solutions is quite different from that with the oil sprays. Although there are some differences, in general the order of repellency with the two series of oil sprays is very similar. The possibility of using such tests for a significant comparison of the repellency of competitive sprays is clearly indicated. With this preliminary work completed, in the absence of any "Official Test Cattle Spray," we are using Formula 2A made up in 47 viscosity oil as our comparison standard for future work.

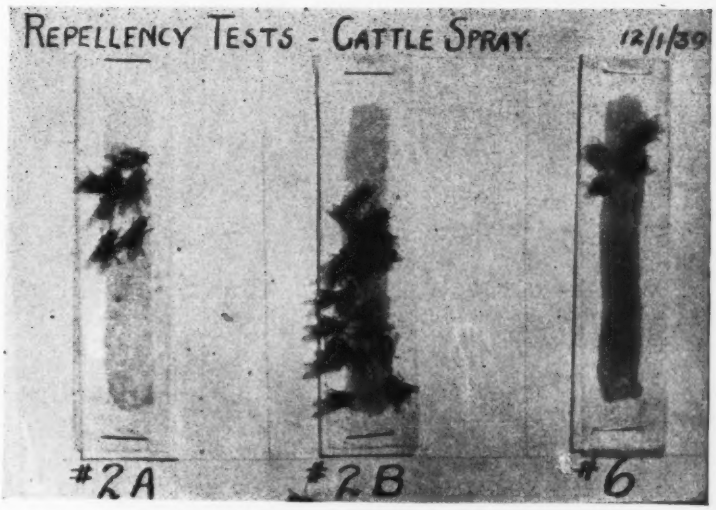
Since, assuming the choice of a suitable base oil, the value of a Cattle Spray depends on the three factors; knock-down, kill and repellency, we have assembled the test data into Tables.

From the evidence presented in Table 9 the choice of the best of these formulae for use with 47 vis-

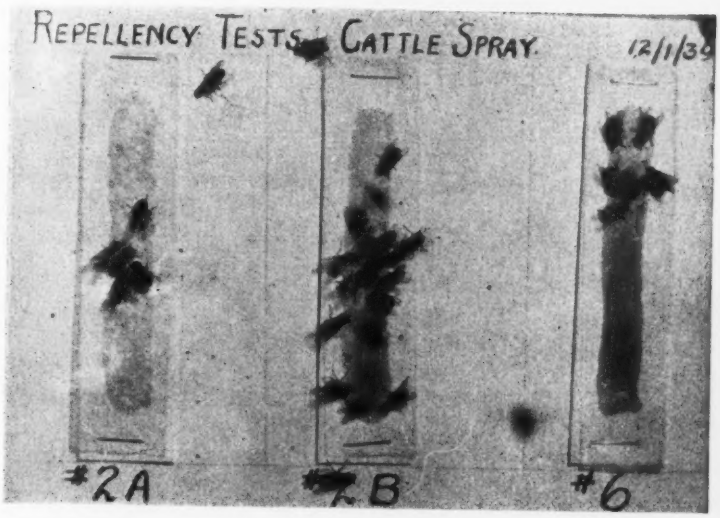
(*Turn to Page* 111)

SANDWICH-BAIT TESTS

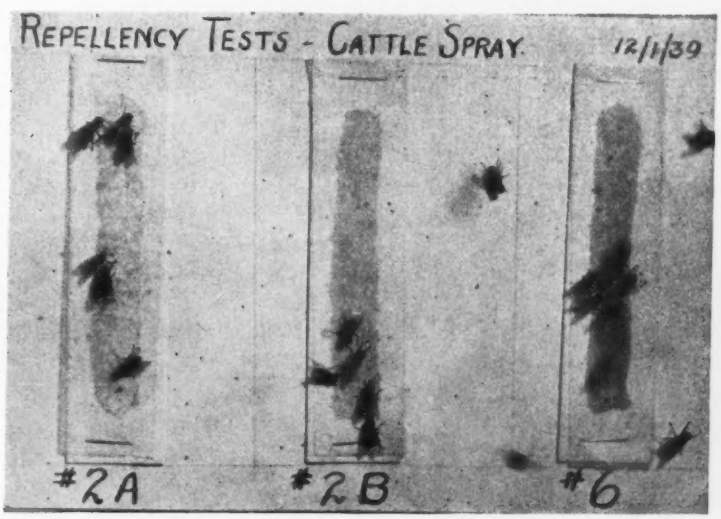
Time-lapse photographs
Cattle Spray Heavy Oil
(73 viscosity)



No. 9 . . . After 3 hours.



No. 11 . . . After 3 hrs. 45 min.



No. 12 . . . After 4 hrs. 30 min.

D&O
ESTABLISHED IN 1798

PYRESSENOL #20 ODORLESS

* * * *

FOR ODORLESS HOUSEHOLD INSECTICIDES
Safe—Non-Irritating—Pleasant to Use
Free from Residual Odor or Taste

* * * *

Comparison with Pyrethrum Extract No. 20 Odorless

1. **Lower cost**
2. **Higher kill at the same dilutions**
3. **Equally rapid and complete knockdown**
4. **Significantly greater effectiveness against roaches—quicker knockdown—higher kill**
5. **Equally safe and pleasant to use—equally free from toxicity or irritation to users**
6. **Less odor—less color—unusually free from any danger of staining**

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Pyressenol No. 20 Odorless is neither a synthetic nor an imitation of Pyrethrum. Its superior efficiency is due to the more effective utilization of its natural Pyrethrin content.

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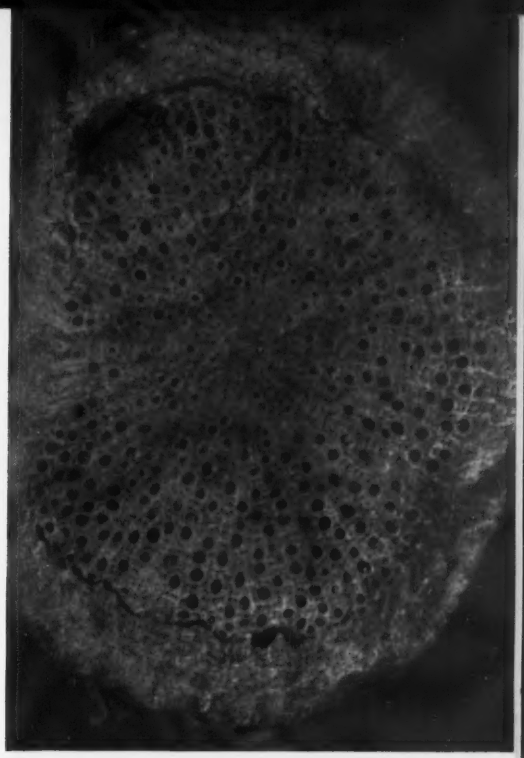
BRAZILIAN TIMBO

By James Sorrel



Cross section of timbo root enlarged five times.

BRAZILIAN timbo, be it in the form of the whole root or in the powdered form, always is a mixture of roots or root fiber of a score of different plants belonging to the Lonchocarpus Species. Timbo of Para consists principally of *Lonchocarpus Urucu*, *Lonchocarpus Floribundus* and *Lonchocarpus Nicou*. Common names of commerce for other well-known Lonchocarpus species are Derris, Barbasco and Cube. (For complete list, see "Lonchocarpus Species" by R. C. Roark.)

There are only two ports of export of Brazilian Timbo: Port of Para, Para, and Manaos, Amazona. Of these two, the first is by far the most important, handling almost all of the exported Brazilian timbo which is shipped exclusively in the powdered form (Whole root exports are prohibited by Para state law).

The quality of the exported Timbo powder depends on the conditions of the contract under which it is sold. Greatest part of the powder is shipped with a guarantee to contain not less than 5% rotenone and 18% total ether extractives, and at least 90% to pass through the 200 mesh screen.

Timbo root of the Para market from which the exported powder is prepared varies considerably in rotenone content depending upon the region where it is cut and the amount of root of the low rotenone species of Lonchocarpus such as *Lonchocarpus Floribundus* present in the root lot. Most of the lots of timbo root of Para will contain from 2¼ to 4% rotenone and from 14 to 18% total ether extractives.

Timbo root (left) as it arrives at the pulverizing plant cut in three-foot lengths and bound in bundles. (Right) Lonchocarpus Urucu roots natural size.

A MIGHTY GOOD SLOGAN FOR FLOOR WAX, TOO!

E PLURIBUS UNUM . . . you'll find this slogan on most U. S. coins. Literally translated, it means "one out of many" . . . actually, it refers to the many states that have united to form one great nation.

E PLURIBUS UNUM pretty well describes Candy's Bright Beauty Wax, too. For here is a wax where durability, luster, water-resistance, non-slipperiness, ease of application, etc. . . . all play an equal part in producing an outstanding floor treatment.

No single feature takes the lime-light. Durability is important, of course but it is never emphasized to the exclusion of safety in walking. Nor is luster sacrificed to gain a finish as non-skid as fly paper. In Bright Beauty, all these features are UNITED to form one great product.

On the floor, Candy's Bright Beauty rivals in appearance those waxes that make a fetish of gloss or luster. In fact, as we have said repeatedly: just put Bright Beauty on a prospect's floor . . . alongside a wax that has already proved "eminently satisfactory" . . . and you practically have an order. (A statement we will gladly demonstrate to your satisfaction any time you give us an opportunity.)

Reasonably water resistant, Bright Beauty will not milk in wet weather . . . withstands damp mopping, yet can be readily removed when it's time to apply a new treatment.

Nor is Candy's Bright Beauty excessively slippery. To be actually *non-skid*, a wax would have to be so soft and sticky it would be impractical for use as a floor finish. The happy medium is a wax that creates no difficulties in walking for the average person.

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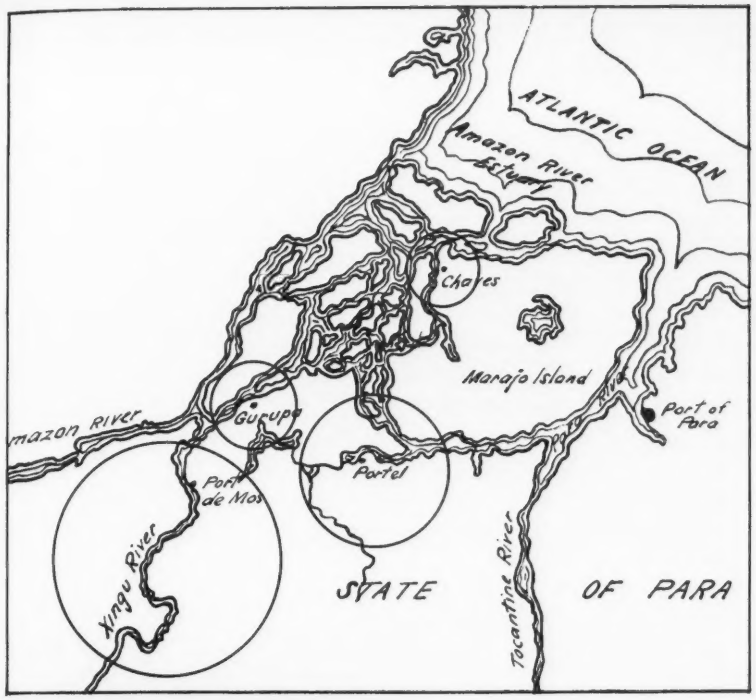
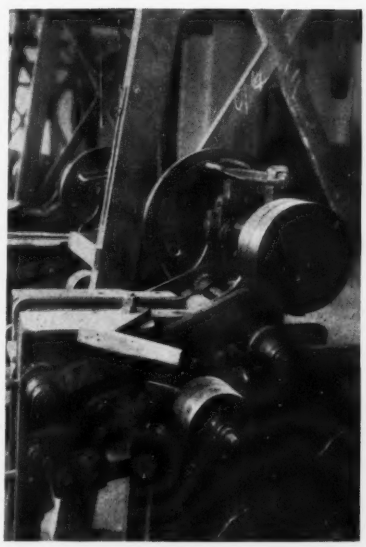
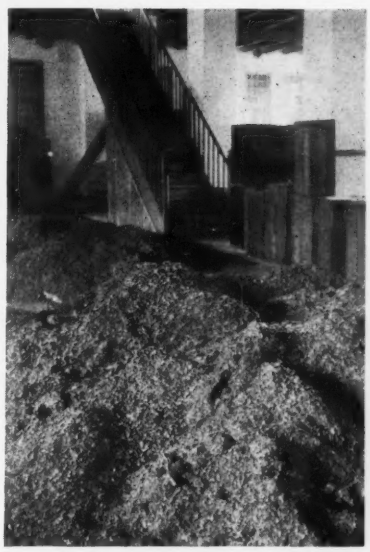




Above — Map showing chief timbo producing regions of Brazil and Port of Para, main shipping point. Left—Machine which cuts the timbo crosswise in thin pieces about one-sixteenth inch thick prior to milling. Below—Cut timbo spread out on factory floor waiting to be dried and then milled to powder. Below right — Milling timbo, hammer mills in background and shaker screen sifting equipment in foreground.



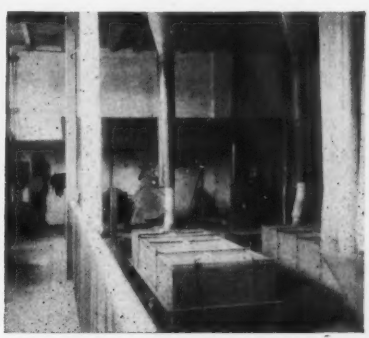
Exports of timbo from Manaos, Amazona, are relatively small. Up to 1939 only whole root was exported from this port. Last year, however, a small timbo pulverizing plant began operation there, producing about 40 metric tons of powder. Root of the Amazona is inferior to the Para root. Most of the lots on the Manaos market contain from 1½ to 3½% rotenone and only 8 to 13% of the total ether extractives. Root lots that yield higher percentages of active ingredients are rare and come from Iquitos, Peru.

For the past four years, the author has been in charge of the timbo milling plant of J. Benzecry & Fils., Belem, Para, Brazil, which firm with other millers, markets its timbo through a syndicate known as Consorcio Agricola & Industrial de Timbo, Ltda. also located in Belem.—The Editor.

There was some timbo planted about three or four years ago in the vicinity of the Port of Para and in the Western part of Marajo Island. None of this planted timbo is sufficiently grown to permit root cutting as yet. Up to now timbo powder of Para has been prepared exclusively from roots of the wild grown plants cut in the woods. The principal regions of Portel, Xingu, Gurupa and Chaves, the first two supplying almost all of the root.

The root is brought to port from the interior in small river motor boats of 30 to 50 ton capacity, loaded into trucks at the docks and delivered to the timbo powder plant. The root contains from 45 to 65% of moisture when it comes to the plant and is allowed to dry for 3 to 5 weeks during which time it loses about two-thirds of its moisture. Then it is cut into slices of about 1/16 inch thick in a machine of the type used for tobacco cutting.

The cut root is spread out in large pans and placed in dryers where it is left from eight to twenty-four hours according to the condition of the drying root. Hot air of about 55°C. is blown through the dryer. The cut and dried root is then fed into mills of the hammer type driven



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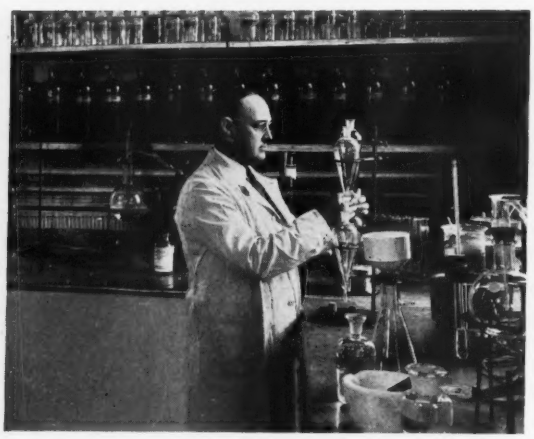

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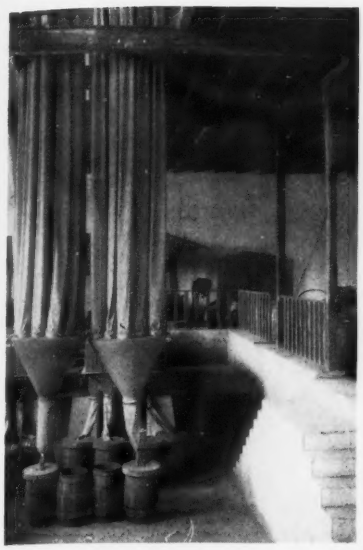
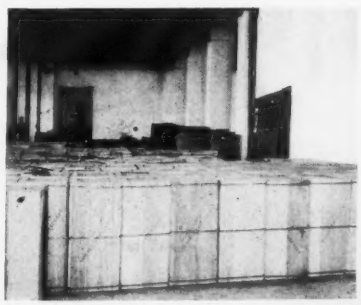


Dust collection equipment where air floated timbo powder is collected. This powder runs highest in rotenone.

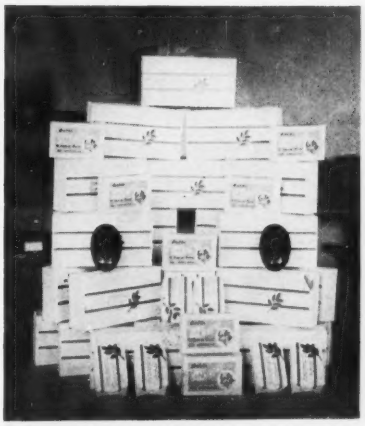
at 3,000 to 3,500 R.P.M., and the milled product separated in a cyclone and filter bags. The solids separated in the cyclone drop onto a sifting screen having three screens: 40 mesh, 80 mesh and 200 mesh separating them into four grades of material: coarse fibrous material, 40 mesh, 80 mesh and 200 mesh powder, of which only the last is marketable.



Powdered timbo in cases ready for export.

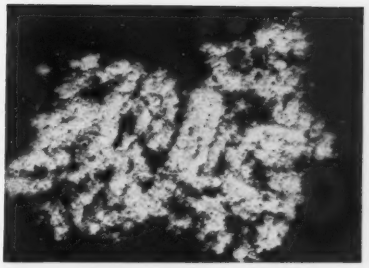
Timbo is tough and difficult to mill, and very hard on the machines. With the type of mills used in Para, 60% yield of the 200 mesh powder is considered good. About 35 to 40% of the coarse residues are either discarded or used for extraction of timbo resins. The powder collected in the filter bags represents only about 3% of the total weight of the milled root and is a fine powder that passes 300 mesh screen and contains the highest percentage of rotenone. The relative rotenone content in the cut root and the products of milling gave the following results:

Root fed to the mills...	3.80%
Filter bag powder.....	8.35
200 mesh powder	5.10
80 mesh powder.....	1.60
40 mesh powder	1.30
Coarse fibrous material.	.60



An insecticidal soap on the market in Brazil, containing 2.5 per cent of timbo extract.

The filter bag powder is mixed with the 200 mesh powder lots containing lower than the required percentage of rotenone in such proportions as to produce mixtures of the desired rotenone content.



Showing the appearance of crystals of pure rotenone, the active principle of timbo.

A small quantity of timbo is sold for domestic consumption in Brazil as follows:

1—Timbo powder as such which is packed in cans without use of dilutients such as china clay, bentonite, etc.

2—For extraction of timbo resins which are used for preparation of liquid insecticides and parasiticidal toilet soaps usually containing from 2½ to 5% of the resins.

3—For extraction of rotenone used in preparations of medical creams for treatment of skin diseases of the ringworm and fungus types.

Last year Brazilian timbo met with strong competition from Peruvian cube and derris of the Dutch Malay Possessions, and prices were lower as a consequence, bringing severe financial pressure on timbo millers.

The thin slices of cut timbo are dried in shelf driers of this type prior to milling.

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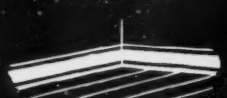
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LOUSE CONTROL...

A wartime problem of armies in the field

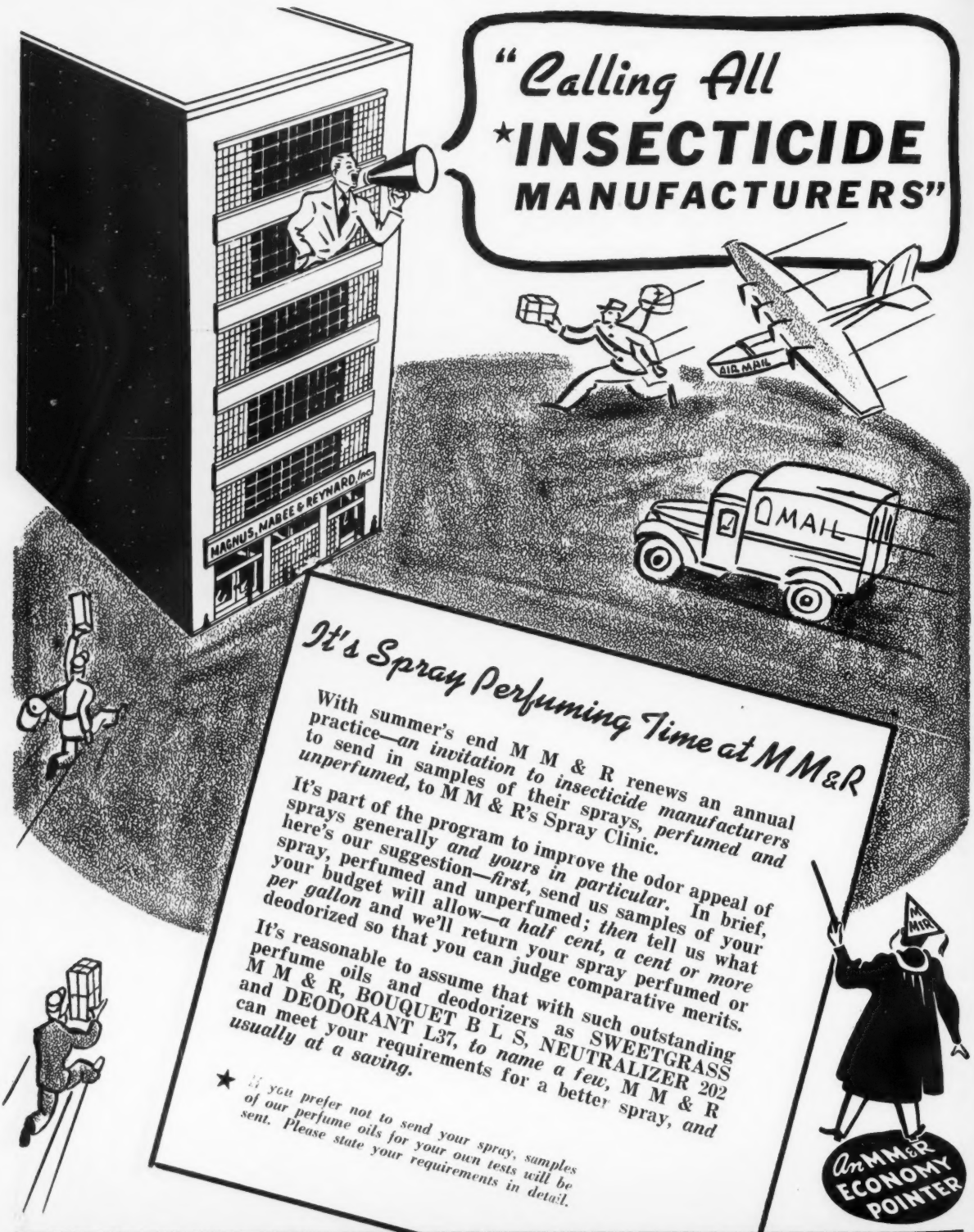
By Paul I. Smith

SINCE the days of the Caesars, the body louse has been a problem of armies in the field. Making no distinction between the color of their shirts, their uniforms, or their skins, the *Pediculus Corporis* goes to war with every army. This tiny insect, measuring only ¾ mm. in length, has probably been responsible down through the years for the deaths of more soldiers than enemy bullets and shells. It is responsible for the transmission from man to man of such diseases as typhus, trench fever, and relapsing fever and various types of skin infections which cause intense irritation and suffering to armies. Even when it is not carrying out its dread role as a carrier of disease, it preys constantly on its host and makes much-needed sleep impossible. It saps the morale of troops in front lines which factor is probably just as important as the direct infection of men with war diseases.

In the World War of 1914-18, the louse, commonly known as the "cootie," was the subject of many a song and story. As many as 10,000 lice were found on a single shirt, and it was no uncommon thing to find three or four hundred nits in a trouser seam in the last war. During her short life, a single female louse may have well over four thousand offspring, and this within a period of 46 days. The problem of louse control with insecticides has never been successfully solved.

In view of these facts, some of which have been suspected or known for centuries, it is no wonder that the medical services of all modern armies are fully alive to the menace of the louse. Yet only 25 years ago, during the Great War, lousiness was the rule and not the exception among the armies in France and on the Eastern fronts, particularly in Serbia, where typhus took a toll of life far greater than the Turk. Ignorance of the results of lousiness was prevalent in the early days of that war and it was not until almost that last stages that it was confirmed that trench fever was due

A delousing station used by the British troops in France during the World War, appropriately designated as "The Lyceum." Heat and steam were the main delousing agents. Photograph from the British Imperial War Museum.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mainly to infection by the louse. Louse rash, a loathsome gift of the insect to its host, was not infrequently mistaken for syphilis and other painful skin affections, due to or aggravated by lice, were not properly diagnosed.

Two varieties of *Pediculus corporis* are known; these are the grey and black varieties, the former being by far the most common, the black often amounting to only 5 per cent of the total count found on the host. The female of the species is about 4 mm. in length and the male about 3 mm. Eggs take from 7 to 10 days to hatch under normal conditions above 65° F. and young lice need an average of 10 to 14 days to attain sexual maturity. The adult form is generally found in the seams of the shirt, especially the collar, and the eggs in the fork of the trousers. Essential conditions of life are warmth, humidity, shelter and a host to provide food, which is, of course, warm circulating blood which the louse taps by means of its stabbing proboscis.

The louse shows a remarkable resistance to anti-parasitic methods and experiments have shown it able to survive a temperature varying from 30 to 38° F. for 7 days and nits lived for 11 days at this temperature. Active lice survived at 30 to 38° F. for 2 days. Bacot (Lister Institute, Vol. 11, 1916.) Professor Nuthall found that nits were not killed by immersion in paraffin for 20 minutes; benzine 20 minutes; petrol 5 minutes; ether 5 minutes. They were also unaffected by chlorine and nits hatched out in the normal way. Active lice and nits were, however, killed by immersion for 10 minutes in 2½ per cent carbolic acid, carbon disulphide and for 5 minutes in 2 per cent lysol. Exposure to a temperature of 52° C. for a period of 30 minutes kills all lice, both active and nits, but it is generally recommended that a temperature of 55° C. is surer.

Delousing represented a serious problem to the authorities in the last war and many of the methods suggested and, indeed, carried out were by no means generally efficient. Even when efficient cleansing was practical, as in the case of dry heat or steam treatments, freedom from lice was only gained for a very short time, as apart from the fact that the men themselves were lousy, their billets, dug outs and even the trenches were often infested. Contamination of clothes was not only due to contact with infested materials, but they could be contaminated by means of lice in the air. Schilling (Muench. med. Woch., No. 32, 1916, p. 1176) proved that the transport of lice through the air was practical.

The method of delousing or cleansing carried out in France during the Great War consisted generally of hanging up or spreading out the infested clothes, etc., in a warm room, temperature 55-60° C., for 30 minutes. This delousing treatment did not entail removal of the eggs or nits from the seams and these had to be brushed or scraped away mechanically by hand. There seems no doubt that dry heat treatment is one of the simplest and most efficient methods in existence as, if properly carried out, it can result in 100 per cent mortality without incurring any great expense or inconvenience. It is, in fact, particularly suitable for use in the field. Of course it must be realized that delousing is only possible behind the lines and that soldiers at the actual front can only rely on makeshift devices in the form of various insecticides, many of which used during the war were of doubtful value.

One of the most effective methods of delousing carried out during the last war was the steam treatment used in Serbia and Egypt in 1916. For this, wooden vans were adapted for the purpose and the original Stammers van designed by Lieut. Stammers, was described by Col. W. Hunter, "Lancet," Sept. 14, 1918, p. 347. The adaptation consisted in placing a narrow steam pipe round the floor of the van by a T piece with a similar pipe coming from the boiler of a small heating engine employed in Serbia for heating the railway carriages. The steam pipe had a few apertures of considerable size and several feet apart to let the steam into the van. Col. Hunter attributed the success of this delousing method to the following factors:—

1. The disinfecting power of steam in continuous motion at ordinary atmospheric pressure.
2. The great force under which the steam is driven into the van and clothes, a force derived from a pressure of 4-7 atmospheres (60-110 lb.) developed in the boiler of the engine.
3. The great volume of steam available from the boiler of even a moderate sized engine.
4. Heat of condensation of steam which has just been set free from a pressure of 4-7 atmospheres on entering the van, i. e. from a temperature of 144° C. to 168° C.

Each double van was found capable of carrying out disinfection at the rate of 500 kits with 1,000 blankets and 500 overcoats every two hours; or 2,000 kits and 4,000 blankets and 2,000 overcoats in a day of eight hours. Barrels were used for smaller parcels of clothing with complete success and were known as "Serbian" barrels.

A number of different delousing methods, which involved impregnation of the contaminated clothes with various solutions, were tried out in the field during the last war with only moderate success. The main difficulties were to find cheap and plentiful insecticidal compounds and to prevent shrinkage of the cleansed garments during drying. It was found in actual practice that a process which involved steeping clothes in a solution, wringing and drying was cumbersome and uncertain compared with a single operation method of delousing, such as baking or steam treatment.

A. W. Bacot and Lieut. L. Lloyd, R.A.M.C. (The British Med. Journ. 499, 1918) found that a 2 per cent solution of lysol or liquor Cresoli Saponatus Fortis was capable of achieving a 100 per cent mortality when clothes were soaked in it for 20 minutes at a temperature of 60-65° F. Other workers, however, found that it was necessary to use a 5 per cent emulsion of soft soap and crude

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carbolic acid, made up by heating 45 to 50 per cent soft soap and 55 per cent crude carbolic acid, to ensure a 100 per cent mortality.

Apart from the use of anti-parasitic solutions, a number of repellents were tried out, such as powdered naphthalene and a mixture of naphthalene, iodoform, and creosote. Essential oils, particularly eucalyptus, were found to have a beneficial action and various pyrethrum preparations also achieved a useful repellent purpose. One of the most interesting repellent methods was that devised by Captain J. A. Gunn and reported in the British Medical Journal, May 5, p. 579, 1917. This consisted of impregnating underclothes in a solution made by dissolving 1½ ounces of naphthalene and 1½ ounces of sulfur in 1 gallon of benzol. The treated shirt or vest, when dry, was reported to be very unpopular with lice and, except for those actually on the body, almost complete immunity could be claimed. Mercurial ointments were popular in the early days and generally consisted of white precipitate salve of the strength of 1 in 10 for the body and 1 in 5 for the pubis, but some soldiers reported this to be completely ineffective and, indeed, lice were said to thrive on it. Stavesacre ointment was also used in the base hospitals. Other insecticides that were tried out included sassafras oils, which proved very deadly when in actual contact with the lice, but was not generally applicable in the field. Paraffin oil was found to be useful, although somewhat uncertain in action and not able to achieve 100 per cent mortality. Cyclo-hexanone was reported to have been used with some success in the German Army.

Of all the insecticides tried uot under war conditions, the most effective for dealing with the body louse was a soft soap emulsion of carbolic or cresylic acids or mixtures of these. Crude unwhizzed naphthalene, applied alone or in the form of a paste made by mixing 90 per cent naphthalene with 10 per cent potash soap can also be regarded as quite successful for rubbing into the seams of clothing and at the fork of the trousers. Crude naphthalene is, indeed, more effective than the well known N.C.I. powder (naphthalene 96 per cent, creosote 2 per cent, iodoform 2 per cent).

Although very little information is available regarding the present wartime methods of delousing, the writer understands that mobile cleansing or disinfecting vans are already in service in France and these make use of steam, dry heat and, in some cases, heavy coal naphtha made according to B.S.I. Standard Specification No. 479. This solvent kills lice immediately on contact and it will also kill the vermin by exposure to vapor for one hour. To supplement the work carried out by mobile units, it is likely that, as the war progresses, use will also be made of steam or dry heat disinfestation huts where large quantities of verminous clothing and bedding can be treated in one batch.

It is to be hoped that if, unhappily, the war does develop on the same lines as the Great War, an adequate supply of efficient insecticides will be handed out to the men in the actual front line who are unable to make use of proper delousing facilities, generally available at the base. The requirements of a suitable repellent are cheapness, plentiful supply and good toxic properties. At the present time there does not seem to be any material other than naphthalene and its various mixtures or pastes with soap, etc., able to fulfill all these necessary requirements.

—— ♦ ——

pH of Antiseptics

In a study of the effect of pH on the bactericidal properties of commercial antiseptics, bacteriological tests were made at pH values from 3 to 8 on solutions of Amphyl, Chlorazene, gentian violet, Listerine, Lysol, malachite green, mandelic acid, methylene blue, Pepsodent antiseptic, potassium dichromate, potassium permanganate, sodium nitrite, Zonite, and Sulphonmerthiolate. These antiseptics were also tested in unadjusted solutions, as were also Mercurochrome, Mercurophen and zinc sulfate solutions. The two mercury-containing products could not be adjusted to the desired pH on account of their incompatability with acids and alkalies. *Eschericia coli* and *Staphylococcus aureus* were used as test organisms.

The bactericidal activity of Chlorazene, gentian violet, Listerine, Lysol, malachite green, mandelic acid, Pepsodent antiseptic, and potassium permanganate is definitely increased with an increase in the acidity of the solution. Values for pH below 3 were not used because such solutions are bactericidal in themselves due to their high acidity and no suitable comparisons can be obtained. Amphyl seems to show a maximum effectiveness at a pH of about 7. Sodium nitrite failed to show bactericidal action under the conditions of the test. Sulphonmerthiolate is most effective in alkaline media. The results indicate that the effect of pH on bactericidal action is independent of the molecular structure of the antiseptic. W. A. Bittenbender, Ed. F. Degering, P. A. Tetrault, C. F. Feasley and B. H. Gwynn. *Ind. Eng. Chemistry* **32,** 996-8 (1940).

—— ♦ ——

Mosquito Larvae Control

Experiments showed that powdered *Deris elliptica* and other rotenone powders were more toxic to mosquito larvae when distributed on the surface of the water than when wetted and deposited at the bottom of the container. The insecticides appear to be ingested by the larvae at the surface of the water and exert their toxic action by absorption through the digestive membranes. E. Roman and G. Netien. *Bull. mens. soc. Linn. Lyon* 8, 74-9; through Chem. Abs.

—— ♦ ——

Cockroach Control

Pyrethrum-kerosene sprays are held to be of little value in cockroach control. The best control agent is sodium fluoride, although borax is also often effective. If infested buildings can be superheated for six hours to at least 120° F. or preferably 130° F., the roaches will be destroyed. Wm. A. Riley. Minn. Agr. Expt. Sta., Extension Folder **82,** 8 pp.

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Established 1915

Standard for Stock Sprays

(*From Page* 97)

cosity oil must lie between No. 8 and No. 2B. Either of these are satisfactory from the standpoint of knock-down, No. 8 shows higher killing power, but No. 2B has the higher repellency. The final choice would rest on the relative importance ascribed to kill and repellency. In any case such a comparative tabulation of results will serve as a guide for further improvement of formulae.

The results of tests on these same formulae, made up with heavy oil (73 viscosity) show 2A and 2B in a very favorable light. Formula No. 6, although in this case the most repellent, lacks adequate killing power. In any case, we consider a 73 viscosity oil as too heavy for cattle spray use.

We believe the tests reported herein have indicated the desirability of having some Official Test Cattle Spray as a standard for comparative tests on cattle spays. The same test spray might be used both for Peet-Grady tests and repellency tests. The most controversial point involved is the nature of the oil for such standard, but if the more generally advocated medium oil (45-55 viscosity) were used, this matter of the specification for the oil could be ironed out as such testing developed. The Peet-Grady test for household insecticides as now constituted is the result of such development over a number of years and we cannot hope for much progress in standardizing cattle sprays, unless some such start is made.

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TABLE 7
Sandwich-Bait Tests
Cattle Sprays—73 Viscosity Oil

Picture No.	*Time Elapsed*	*Number of Flies Feeding on Cattle Spray Bait Numbers* 4	8	7	6	2A	*Remarks*
19	0 hr.—35 min.	16	2	1	0	0	
20	1 hr.— 5 min.	23	0	2	0	2	
22	2 hr.	19	2	4	0	9	
Sub Totals		58	4	7	0	11	Bait 4 exhausted
23	3 hr.		17	4	0	6	
25	3 hr.—16 min.		40	8	4	8	
26	4 hr.—25 min.		35	13	11	13	
29	4 hr.—45 min.		17	14	8	12	
Sub Totals			113	46	23	50	Bait 8 exhausted
30	5 hr.			15	12	17	
31	5 hr.—30 min.			13	15	9	
33	6 hr.—10 min.			16	24	9	
34	6 hr.—32 min.			11	19	10	
Totals				101	93	95	Bait 7 exhausted

TABLE 8
Sandwich-Bait Tests
Cattle Sprays—73 Viscosity Oil

Picture No.	*Time Elapsed*	*Number of Flies Feeding on Cattle Spray Bait Numbers* 2A	2B	6	*Remarks*
1	1 hr.—20 min.	10	0	1	
2	1 hr.—45 min.	12	0	1	
4	2 hr.	25	2	1	
7	2 hr.—30 min.	15	11	3	
Sub Totals		62	13	6	Bait 2A exhausted
9	3 hr.		22	5	
11	3 hr.—45 min.		17	6	
12	4 hr.—30 min.		5	8	
Totals			57	25	Bait 2B exhausted

TABLE 9
Comparison of Cattle Spray Formulae
47 Viscosity Oil

Formula No.	*Knock-down*	*Adjusted Kill*	*Repellency Increasing*
5	85.5	54.2	↓
4	65.7	50.7	
1	99.5	55.0	
8	98.5	68.0	
3	99.5	43.5	
7	99.1	50.8	
6	99.3	54.4	
2A	99.7	52.0	
2B	99.5	54.0	

TABLE 10
Comparison of Cattle Spray Formulae
73 Viscosity Oil

Formula No.	*Knock-down*	*Adjusted Kill*	*Repellency Increasing*
5	34.5	25.4	↓
3	95.2	35.7	
1	97.7	45.0	
4	12.7	19.8	
8	96.6	49.9	
7	97.3	33.0	
2A	99.5	59.6	
2B	99.3	55.0	
6	97.4	35.6	

HIGLEY CHEMICAL COMPANY

Announces

PHANTOM FINISH

The Higley Chemical Company of Dubuque, Iowa, announces Phantom Finish, a new product which protects painted walls from smudges, pencil marks, ink stains, rubber burns, grease, and soot.

Every school is a potential customer, because every school building with painted halls bears evidence of students bracing themselves against the walls and leaving heel marks (rubber burns), oil stains from the hair, ink stains, pencil and crayon marks, and even lipstick. Every custodian knows how difficult it is to remove these marks and stains. He knows that only strong cleaning agents remove them from unprotected walls. But soap and other cleansers discolor the paint. A painted surface never looks the same after cleaning by old methods. This difficult and expensive maintenance problem forces most schools to use a gloss paint on the walls as high as necessary, and a dull finish above and on the ceilings. A gloss paint does not stain quite so easily as a dull finish, but this procedure only partially remedies the situation.

Phantom Finish gives complete protection to painted walls. Phantom Finish is brushed or sprayed on painted walls to protect the paint. Oily hands cannot easily stain the flat, transparent film produced.

When walls which have been treated with Phantom Finish become soiled and unsightly, they are easily and quickly cleaned, merely by washing with CLEAR WATER. Clear water does not dull or stain painted surfaces. Clear water washes the walls spotlessly clean and leaves the original gloss unharmed. After being washed with clear water, the walls are recoated with Phantom Finish to give continued protection.

Phantom Finish dries in twenty minutes and covers approximately 1500 square feet per gallon. It contains no nitrogenous substances which are subject to putrefaction, such as casein, glue, or gelatin. These agents are known to be unstable, especially in moist atmosphere favorable to bacterial growth. Phantom Finish is stable indefinitely and can be stored for long periods of time without danger of deterioration. It is colorless, odorless, and transparent, never discoloring with age. Phantom Finish renders surfaces impervious to penetration by oils and greases.

For further details and prices on Phantom Finish, write on your letterhead to Higley Chemical Co., Dubuque, Iowa.—ADVT.

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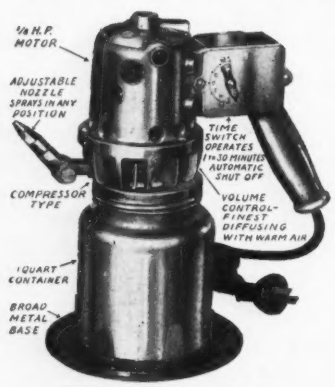
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5118 N. RAVENSWOOD AVE. *We do not sell insecticides. Our business is manufacturing sprayers. Patented in U. S. A. and Foreign Countries.* CHICAGO, ILLINOIS

Floor Cleaning

(*From Page* 29)

sodium sesquicarbonate is less harmful to rubber floors than a good grade of neutral potash soap is a controversial point open to much discussion. Experience seems to show that if soaps are used to clean rubber floors and are not completely rinsed off, they will contribute to the premature disintegration of the floor. When they are used in dilute solution, however, and are carefully rinsed off, it is doubtful whether their occasional application as required will damage these floors.

Asphalt Floors

Floors in this classification may be termed soft composition for they are the most easily indented and most easily injured by abrasives of all the flooring materials. Mastic, troweled asphalt and asphalt tile are included in this group. Like most composition floors, asphaltic floors are corroded by oils, greases and organic solvents, but are the least affected by water of all resilient floorings. They also have a greater resistance to alkalies and other chemicals than other composition floors and because of their low cost are steadily increasing in popularity. Any good quality floor scrub soap can be used in cleaning asphalt floors as long as it contains no oils or solvents. Since most potash soaps designed for regular floor cleaning contain a maximum of 3 per cent of pine oil and are used in highly diluted solutions, the percentage of pine oil is negligible in the soap as used in respect to its solvent effect on asphalt floors. Rosin soaps containing a percentage of wax were reported used in one large office building in maintaining mastic floors to serve the double purpose of cleaning and finishing. In use, the rosin soap-wax compound is not completely rinsed off, but is polished into the floor with a buffing machine. This treatment is said to produce a non-slippery surface.

Felt Base Floors

These floors consist of a fairly thin veneer of paint laid on a foundation of felt. Rough treatment in cleaning will remove the painted pattern, cause chipping and cracking of the veneer and distintegration of the base material. The life of felt base floors is comparatively short at best, but if the use of strong alkalies and abrasives is avoided, they will give much more satisfactory service. More floors are scrubbed away than are walked away, and this applies particularly to felt base floors.

Painted Floors

The frequency with which a floor needs painting is determined to some extent by the cleaning methods used on it as well as the amount of traffic. Alkali salts and abrasives will naturally remove paint quickly, but liquid soaps sold for the purpose of floor maintenance are quite suitable for painted floors whether they are concrete or wood. Several liquid cleaners in emulsified form are sold expressly for painted surfaces and are guaranteed not to injure them. One contains 5 per cent of triethanolamine soap, 35 per cent of water and the balance kerosene. This product carries a strong odor of kerosene.

Concrete Floors

Many compounds are on the market designed for the rough cleaning jobs on floors in garages, factories, and elsewhere where heavy deposits of grease, oil, tar, etc., must be removed. Two general classes of products are sold for these "heavy duty" cleaning operations, (1) liquid or paste products which are generally used dissolved in some strong solvent, such as kerosene, and which are emulsifiable and can be washed away with water, and (2) mixtures of strong alkalies used in water solution, sometimes with admixture of some wetting agent or soap. Abrasive materials are frequently very effective for aiding in heavy grime removal, but where the material is flushed down the sewer, the constant use of any insoluble material is not good practice.

The liquid products are all sorts of mixtures, and because the question of floor damage is not a serious one, the limits on composition are few. However, these products must be cheap. Compounds containing 10 to 40 per cent of creosote oils along with varying proportions of pine oil, kerosene, and a soap, possibly a rosin soap, are quite widely used. These products are something akin to a cheap disinfectant. They have the advantage of being usable in kerosene oil, having strong solvent and softening action on grease, being emulsifiable and readily washed away with cold or hot water. Similar products are made using naphthenate soaps, coal tar oils, and solvents, as well as other mixtures. These products are used in connection with heavy duty scraping or with stiff brushes, according to the cleaning problem.

The alkaline cleaners are numerous, trisodium phosphate, soda ash, sodium metasilicate, and even caustic soda finding use in mixtures. These are used in various ways in water solution. Regular low-grade soap powders containing five to eight per cent of soap also find wide use in this type of cleaning. The soap and alkaline cleaners are suitable for factory floors where hot water is available and the grease deposits not too heavy. For garages and oil plants and the like, the solvent cleansers are more effective. However, the question of offensive odor is one to be considered in use of the latter. In general factory use, especially in food factories, meat plants, etc., the regular alkaline and soap cleaners are still used almost exclusively on floors.

TSP in Textile Boiling

The use of commercial trisodium phosphate in kier boiling, both alone and with caustic soda, Turkey red oil, soda ash, etc. has been studied. The best results are given by using the reagent in conjunction with other substances. Trisodium phosphate is of interest when boiling in the presence of colored goods, superior whites being obtained. F. F. Darbary, S. R. Ramachandran and K. Venkataraman. *J. Indian Chem. Soc.*, 2, 81-94.

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Pat. Sept. 1934 Pat. Aug. 1938

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For dairies, cheese factories, and ice cream plants, we recommend the Model A of one-quart capacity. Install one unit for every 10,000 to 12,000 cubic feet of space, two for 25,000 cubic feet, and so on.

For larger space fumigation such as in flour mills, bottling plants, packing plants, breweries, etc., we recommend the Model B, of half-gallon capacity. Install one unit for every 25,000 cubic feet, two for 50,000 cubic feet, and so on.

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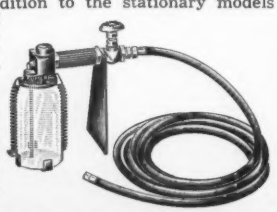
The Portable Fumeral Model 7 of half-gallon capacity is extensively used in addition to the stationary models for local treatment of machinery, mill leggings, closets, etc.; also for treating grain, carloadings, greenhouses, etc.



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• Fumeral Stationary and Portable Diffusers are recommended and sold by leading manufacturers and distributors of insecticides and fumigants. See 1939 "Soap Blue Book." Write for illustrated literature, "Modern Warfare On Insects," data, and prices.

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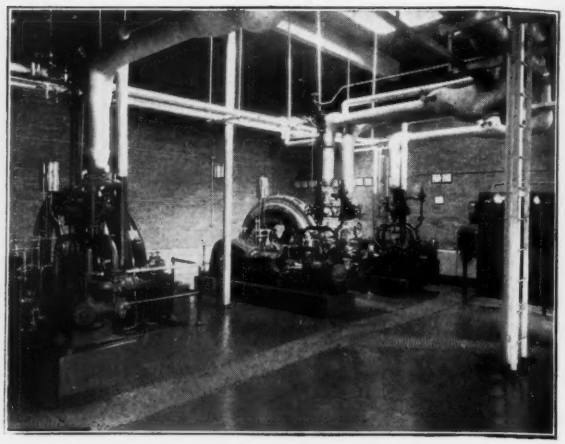

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Pyrethrum Mixtures

A simple apparatus was constructed to measure the adhesiveness of insecticide mixtures. The adhesiveness of pyrethrum powder was increased from 4.1 to 106 by mixing one part of pyrethrum with two parts of talc. A method was devised for determining the effect of pyrethrum mixtures by biological evaluation with *Calandra granaria* L. The pyrethrum grown in Hungary seemed of the same value as that imported from Yugoslavia. The decrease in effectiveness on dilution of the powders is not linear. There is a rapidly diminishing activity below a certain limit of dilution. Marton Aczel. *Kiserletugyi Kozlemenyek* **42,** 241-65; through Chem. Abs.

Derris Spray

A rapid polarimetric method was adopted to determine the rotenone content of derris powders, and the results obtained agreed fairly well with those of biological tests. A satisfactory spray for use on tobacco was prepared by adding two parts by volume of neutral coconut oil or peanut oil to eight parts of a benzene extract of powdered derris containing 10-12 per cent rotenone. This was diluted for use. The addition of oil served mainly to reduce the risk of scorching. H. A. Middelburg. *Rev. Applied Entomol.* **27A,** 493; through Chem. Abs.

Petroleum Phenols

Light, medium and heavy grades of phenolic compounds from petroleum sources were investigated, each grade having been refractionated into 3° C. cuts. The various fractions show an increase in phenol coefficient with boiling range. The fraction boiling at 224-227° C. from petroleum acids shows a higher phenol coefficient than the same fraction from coal-tar acids, due no doubt to a difference in composition. The lighter grade acids from petroleum are composed mainly of cresols and xylenols with only small amounts of phenol; the heavier grade acids contain cresol and xylenols in small proportions, together with large amounts of higher phenolic homologs. Acids from both sources contain the same phenolic compounds, but they are present in different proportions. The acids from coal tar contain the various constituents in more nearly equal amounts, while petroleum acids contain larger amounts of individual compounds. Edward Field, Fred H. Dempster, and George E. Tilson. *Ind. Eng. Chemistry* **32,** 489-96 (1940).

Anti-mold Varnish

A varnish to protect books and other items from the formation of mold in warm and humid climates, now in use by the Philippine Bureau of Science, has been passed along by Dr. Alvin J. Cox of the California Department of Agriculture, as follows:

Turpentine	105 cc.
Castor oil	56 cc.
Ethyl Alcohol	840 cc.
Shellac	217 grams
Camphor	35 grams
Mercury Bichloride	2.1 grams

Dissolve the finely ground shellac in a portion of the alcohol, about 500 cc., which should be at room temperature and not hot. To this solution dissolve the castor oil dissolved in turpentine. Allow the mixture to stand overnight to precipitate gums and then filter. To the clear filtrate, add the camphor and bichloride dissolved in the remainder of the alcohol. Varnish books, etc. on dry day.

Emulsifying Agent

Emulsifying agents suitable for use in preparing shaving creams, floor polishes, insecticides, disinfectants, etc., are obtained from a condensation product of an alcoholoci amine such as an ethanolamine, and a higher carboxylic compound such as a fatty acid, by further condensation with an organic compound such as thionyl chloride which produces an acid-reacting product. Wolf Kritchevsky, to Nonol. Inc. U. S. Patent No. 2,192,664.

Moth Proofing Agent

Insecticides suitable for protecting wool and furs from moths contain a diazoamino compound free from sulfonic and carboxyl groups, such as phenyldiazopiperidine. It is suitably used either with a wetting agent or with an inert material such as chalk, talcum, or kaolin, and with other insecticides such as nicotine, derris or pyrethrum, etc. Kaspar Pfaff and Michael Erlenbach, to Winthrop Chemical Co. U. S. Patent No. 2,191,259.

Phosphorus for Cockroaches

A preparation containing 2 per cent of finely divided yellow phosphorus dispersed in a viscous paste was more toxic to the American cockroach than sodium arsenite or sodium fluoride suspended in the same viscous medium. T. H. Cheng and F. L. Campbell. J. Econ. Entomol. **33,** 193-9 (1940).

Mold Preventives

Aqueous solutions of phenols or phenol derivatives are formed with the use as a dissolving agent of a sulfonate of an aliphatic alcohol containing 6-10 carbon atoms. Such solutions are suitable for use as mold preventives. Richard Hueter, Richar Neu and Heinz-J. Engelbrecht. U. S. Patent No. 2,191,405.

Wood and Metal Polish

Abrasive particles such as those of diatomaceous earth are coated with a film of shellac and mineral oil and dispersed in an aqueous medium with the aid of an emulsifying agent such as one containing soybean phosphatides. M. J. Seuberling, to Vegetable Oils Specialty Corp. U. S. Patent No. 2,193,241.

Antiseptic

After trying various porducts, a 0.2 per cent solution of azochloramide in triacetin proved to be a valuable, non-irritant, and active antiseptic in the presence of organic matter. R. M. Freeman. *Ind. Med.* **9,** 87-8 (1940); through Chem. Abs.

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News.....

Hollingshead to Rebuild

A new mixing and filling plant is to be erected by R. M. Hollingshead Corp., Camden, N. J., to replace the one destroyed on July 30 by a fire which demolished approximately 30 per cent of the company's total floor space. The new plant will be built adjacent to the Hollingshead company's Cooper River plant, several blocks from the scene of the blaze, rather than on its recent site. According to W. F. Plowfield, director of sales, no serious interruption of business is anticipated as a result of the fire, despite the heavy losses, as inventories and warehouse stocks located throughout the country appear to be ample for immediate needs of customers until full manufacturing capacity can be re-established.

Rotenone Root Imports Up

Imports into the United States of rotenone-bearing roots, during the first half of 1940, from Asia and South America were on a relatively high basis. The total for the first six months of 1940 was 3,285,125 pounds, or about 64 per cent of the volume for the entire previous year when 5,148,882 pounds were imported. Most of the derris imported in 1940, came from British Malaya, while the major part of the cube, timbo and barbasco root imports came from Peru.

Aborn Chemical Moves

Aborn Chemical Industries, building maintenance supplies, has moved its place of business to 239 Charles Street, Providence, R. I. The office was formerly at 22 Harris Avenue in Providence.

Rat Poison Stipulation

K-R-O Company, Springfield, Ohio, engaged in selling a rat-killing preparation, "K-R-O (Kills Rats Only)," has entered into an agreement with the Federal Trade Commission to cease representing that the preparation is a sure rat-killer and will make rats go outside to die. The company also agreed to cease cleaming that the preparation will protect homes or farm buildings, driving rats out permanently, or that "K-R-O" is the most effective rat-killer on the market.

Stern Chemical Incorporates

Stern Chemical Corp., 819 Swan Street, Terre Haute, Ind., has recently been incorporated to manufacture soaps, waxes, chemicals and other products.

"Per-Mo" Stipulation

O. S. Schaffer, trading as Per-Mo Mothproof Co., Kansas City, Mo., has entered into an agreement with the Federal Trade Commission to cease using the words "permanent mothproof liquid" as descriptive of his product, "Per-Mo," or using the word "permanent" or any similar term to lead purchasers to believe that the moth immunizing effect of the product will endure indefinitely or will not be impaired by dry-cleaning, exposure or use.

Lead and Arsenic Tolerances

New tolerances for lead and arsenic on apples and pears shipped within the jurisdiction of the Federal Food, Drug and Cosmetic Act are announced by Federal Security Administrator Paul V. McNutt. Effective August 10, 1940, the new tolerances are: 0.05 grain of lead per pound of fruit and 0.025 grain of arsenic (expressed as arsenic trioxide) per pound of fruit.

These new tolerances are based on the results of a three year study made by the U. S. Public Health Service at the Direction of Congress. No change is made at this time in the tolerance for fluorine set by the Secretary of Agriculture on November 14, 1938, at 0.02 grain of fluorine per pound. The Public Health Service recommends that the Federal Security Administrator urge the Secretary of Agriculture to continue studies in the substitution of other materials as insecticides for those giving dangerous residues, including lead and arsenic. The tolerances as released are subject to revision "if methods of evaluation of toxic effects in human beings are improved or changed."

Traband & Co. Move

Louis C. Traband & Co., manufacturers and distributors of "Cremeoline" sanitary products, formerly located at 602 N. 62nd Street, East St. Louis, Ill., have just moved to 6123 State Street.

Pyrethrum in California

Pyrethrum as a commercial crop is being tried out in a small way in California on the property of Fontana Farms Co., where 800 pounds of the dried flowers were recently picked from one and a quarter acres. The only real commercial scale production of pyrethrum in the United States at present is on 160 acres in Pennsylvania owned by Standard Oil Co. of N. J.

Peerless to Erect Factory

Peerless Soap & Chemical Co., Des Moines, Iowa, has recently announced plans to erect a factory building in Detroit at Oakman Boulevard and Cloverdale Avenue.

Test Cabbage Pest Control

Dusting mixtures and sprays of derris have been found to be equally effective in the control of cabbage caterpillars on both cauliflower and cabbage plants according to the results of experiments recently conducted in California and described in *Western Grower & Shipper*. A dust mixture consisting of one part of 4% derris to three parts of diluent gave satisfactory results, it is said, in the control of the three more common species of cabbage caterpillars while cube or pyrethrum dust mixtures at the same dilution also gave good results. It was found to be especially important, however, to start the treatments early in the development of the plants since it was not possible to obtain a good coverage of the insecticides over the heavy

foliage of nearly mature plants. The sprays used in the experimentation were made up from derris powder and contained 0.02 to 0.025% of rotenone. In general, it is believed that the derris and pyrethrum compounds should give the same results on broccoli, kale and collard crops, provided a good coverage of the affected parts of the plant is obtained.

Rotenone for Black Scale

Studies of the effectiveness of rotenone-bearing materials with low dosages of oil in the control of black scale on citrus trees have been conducted over the recent years in the California growing areas, both by insecticide manufacturers and investigators of the California Citrus Experiment Station, Riverside, Calif. Some of the results of these studies are included in an article "Black Scale Control" in the August, 1940, issue of *The California Citrograph*. They indicate that low dosage oil-rotenone combinations compare very favorably in degree of control with the usual full dosage of oil. Except on heavy infestations of black scale, or where a very smutty condition exists on the foliage, the combination of rotenone-bearing materials with a low dosage of oil was found under test conditions to work out very well, making it possible to cut down the oil content of the spray preparation from the normal percentage of 1 2/3 per cent to a figure between 1/4 and 1/2 per cent.

As a matter of fact the report by A. M. Boyce, J. F. Kagy, G. L. McCall and J. P. LaDue, of the experiment station, indicates that of all the materials investigated, the rotenone-bearing products are the only ones that have shown enough promise, together with a sufficient margin of safety, to be marketed for control of black scale. One of the limiting factors in their use has been the difficulty of obtaining true solutions of the rotenone-bearing materials in petroleum oil. Extensive experiments on various solvents have been conducted and are continuing. The accompanying table reports on one set of studies conducted by the investigators above named:

Arrange DCAT Meeting

Arrangements for the Fall meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade which will be held at Skytop, Pa., Friday and Saturday, October 18 and 19, were discussed at a recent meeting at the Chemists' Club, New York. J. J. Toohy, sales manager of E. R. Squibb & Sons, and chairman of the committee on arrangements, appointed the following committee chairmen: reception,—John A. Chew, John A. Chew, Inc.; Thursday evening entertainment,—S. B. Penick, Jr., S. B. Penick & Co.; Friday evening entertainment,—E. T. T. Williams, Becton, Dickinson & Co.; banquet,—John P. Remensnyder, Heyden Chemical Co.; ladies' entertainment,—A. A. Wasserscheid, Mallinckrodt Chemical Works; golf tournament,—Victor E. Williams, Monsanto Chemical Co.; transportation,—Robert B. Magnus, Magnus, Maybee & Reynard, Inc.; business program,—Hugh Craig, *Oil, Paint & Drug Reporter;* publicity,—Walter Murphy, *Chemical Industries.*

Ralph E. Dorland
Chairman, Drug Section

Violize Co. Moves

Violize Co., manufacturer of wax products, has recently moved to 2045 N Street, Lincoln, Nebraska. The company was formerly located at Chadron, Nebraska.

Huge Co. Moves Offices

Huge Co., sanitary chemicals, formerly at 7th Street and Chestnut Street, St. Louis, has just moved its offices to 1808 Chouteau Street.

SUMMARY OF RESULTS WITH THE VARIOUS METHODS OF USING ROTENONE IN CONTROL OF BLACK SCALE IN THE COVINA AREA DURING 1939

Plot No.	*Treatment*	*Number live insects before treatment*	*Mean percentage insects alive after treatment*
A	Oil[1] at ½% (CHECK)	7,584	13.9
B	Oil[1] at ½% plus exhausted derris[2] at 1 lb.—100 gals.	11,200	8.6
C	Oil[1] at ½% plus derris[3] (5% rotenone) at ½ lb. plus exhausted derris[2] at ½ lb.—100 gals.	7,215	1.4
D	Oil[1] at ½% plus derris[3] (5% rotenone) at 1 lb.—100 gals.	6,407	0.9
E	Oil at ¼% containing K-58[4] with 16% derris resins[5] in solution at 1/16% plus exhausted derris[2] at 1 lb.—100 gals.	6,651	0.8
F	Same as plot E, except walnut-shell flour at 1 lb.— 100 gals. substituted for exhausted derris	6,934	0.8
G	Oil[1] at ¼% containing K-58[4] with 16% derris resins[5] in solution at 1/16%	6,502	0.5
H	Oil[1] at ¼% containing DP[6] with 8% derris resins[5] in solution at ⅛% plus exhausted derris[2] at 1 lb.—100 gals.	4,800	3.1
I	Same as plot H, except walnut-shell flour at 1 lb. —100 gals. substituted for exhausted derris	6,842	2.0
J	Oil[1] at ¼% containing DP[6] with 8% derris resins[5] in solution at ⅛% plus soda ash at 4 oz. —100 gals.	5,777	0.7
K	Oil[1] at 1 2/3% (CHECK)	4,298	0.6

NOTE: Light-medium grade oil used in all instances.
[1] Oil contained 1% glyceryl monooleate as an emulsifier.
[2] Exhausted derris refers to powdered derris root from which the toxic principles have been extracted.
[3] Derris refers to powdered derris root.
[4] K-58 is 2 (4-tertiary butylphenoxy) ethanol, which functions as a solubilizer for the derris resins and oil.
[5] Derris resins are the extractives from derris root which have been dried and contain 25% rotenone.
[6] DP is dibutyl phthalate, which functions as a solubilizer for the derris resins and oil.

Deny FTC Charges

Denying that they have been acting in restraint of trade, the Agricultural Insecticide and Fungicide Association and its member companies have filed answers to a complaint issued against them recently by the Federal Trade Commission. Claiming that their activities in the association have resulted in widening of competition among manufacturers and sellers of their products, the companies admit that the association maintains an open price filing system for the filing of previously announced prices. Individual companies file their prices and lists of wholesalers and retailers with the association, and in return they receive price changes and lists sent in by other manufacturers. The companies claim they determine individually the basis on which sales are made, and state that the lists furnish information enabling them to comply with the Robinson-Patman act. As soon as all the accused companies have filed their answers, the FTC will set a date for a hearing to check further into the charges.

New Insecticide Book

A Survey of Insecticide Materials of Vegetable Origin, edited by H. J. Holman and published by The Imperial Institute, London, under the auspices of its Plant and Animal Products Department, August, 1940, 155 pages, paper board cover. In three main sections, the book covers (1) nicotine, hellebore, and other alkaloid-bearing insecticide materials; (2) derris, cube, and other rotenone-bearing materials and allied compounds; (3) pyrethrum. Quassia and plant oils are covered in two minor chapters. The subject matter of the book was compiled with the aid of six leading British authorities, among whom the name of Dr. F. Tattersfield of Rathamsted Experimental Station is quite familiar to Americans. This new survey is fully in keeping with the high standards of the Imperial Institute in its published works. It is unusually complete for so small a volume, completely up to date, and to be recommended for inclusion in insecticide libraries. Orders may be sent direct to The Imperial Institute, London, S.W. 7 or will be passed along by us. In either case, include check or money order for $1.25.—The Editor.

Form New Insecticide Co.

Roxboro Chemical Corp., with main offices in Roxboro, N. C., has just been chartered to manufacture and sell insecticides, chemicals and other products. The authorized capitalization is $100,000, with $1,000 subscribed by Thomas R. Bennett, Alma Jo Bennett and Everett R. Jones all of Roxboro.

William O. Buettner Marries

William Oscar Buettner of Oscar G. Buettner & Son, Inc., Brooklyn, exterminators and fumigators, was recently married to Miss Helen Emilie Roehrs, daughter of Mrs. Julius Theodore Roehrs, in Rutherford, N. J.

Sues Lambert Pharmacal

F. W. Fitch Co., Des Moines, has just entered suit against Lambert Pharmacal Co., St. Louis, for $50,000 damages, claiming infringement of a copyrighted magazine advertisement involving use of the headline, "Goodbye Dandruff."

Issue Insecticide Bulletin

Insect pests attacking fruit and insecticidal preparations for dealing with them are considered at length in a bulletin isued recently by Kentucky Agricultural College, Lexington, Ky. Bulletin 393, "Fruit Pests and Their Control" is the title of the publication.

Adhesive for Plant Sprays

The addition of 0.25 liter of a special bone-glue gelatin to 100 liters of spray solution is recommended to make insert sprays adhere well to the plants being sprayed. Ctibor Blattny. *Winzer* **4**, 16-18; through Chem. Abs.

Sales Drive on "Kleen-All"

Ryan Products Co., Chicago wholesale grocery distributor, is conducting a house-to-house sales drive throughout Chicago for "Kleen-All" household bleach. Housewives are offered one gallon in a glass container for 25 cents. Mrs. Thos. W. Ryan, wife and business associate of the company president, said the product has been on the market one and a half years and that the door-to-door promotion is being tried out with a crew of twenty salesladies. Sales the first week by this method totalled over 900 gallons, she stated.

Climalene Co., Canton, Ohio, turn the appearance of scrupulous cleanliness in their delivery cars to good effect in building acceptance for their products among users and distributors. Blue Ford V-8 sedans, with white lettering and white sidewall tires are used to build up the desired effect. The company sells "Climalene" for home cleaning, "Bowlene" toilet bowl cleanser and "Softene," a heavy duty institutional cleanser.

PRODUCTS OF MERIT

STABLE

SELF POLISHING WAX
WATERPROOF
LIQUID WAX
POLISHING TYPE
PASTE WAX
DANCE WAX
WAX CLEANER
FURNITURE POLISH
FLOOR SEAL
MOPPING VARNISH
BOWLING ALLEY POLISH
RUG SHAMPOO
CONCENTRATE

UNIFORM

Every product manufactured under accurate chemical control.

BUCKINGHAM WAX CORP.
VAN DAM STREET & BORDEN AVENUE
LONG ISLAND CITY, NEW YORK

For Better Insecticide Blending — A Disc Blender

To insure a true blend—a perfect analysis of your product at all times—a uniformity of color—a better product for modern spray equipment, consider the Sprout-Waldron disc blender as a final finishing machine. It is being used by leading insecticide manufacturers with most gratifying results. It is a complaint stopper. Ask about it.

SPROUT, WALDRON & CO., INC.
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MIXING, CONVEYING. POWER TRANSMISSION MACHINERY

YOUR OWN BRAND Toilet Soaps at Small Cost

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GEO. A. SCHMIDT CO.
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Chicago.

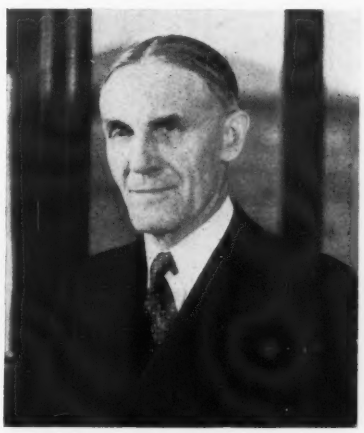
Pest Control Association to Meet in Indianapolis, October 28-30

FIRST details on the program for the annual meeting of the National Pest Control Association, to be held at the Hotel Claypool, Indianapolis, Ind., October 28, 29 and 30, have just been released by Prof. J. J. Davis of Purdue University.

On the program are a number of speakers who have been heard at former conventions, including G. C. Oderkirk and F. E. Garlough of the U. S. Fish and Wildlife Service (formerly the Bureau of Biological Survey); C. L. Williams, Assistant Surgeon General of the U. S. Public Health Service; W. E. McCauley of the University of Illinois; J. J. Davis of Purdue University; George Hockenyos of Springfield, Illinois; and T. E. Snyder of the U. S. Bureau of Entomology. New speakers will include D. M. DeLong of Ohio State University; Frank N. Wallace, State Entomologist of Indiana; P. E. Lull of Purdue University; M. B. Christian of the American Lumber and Treating Co.; F. C. Bishopp of the U. S. Bureau of Entomology; Arthur Overley of the Indianapolis Better Business Bureau; and Enos B. Buckanan of Cleveland.

Monday evening will be given over to the Booth Exhibits which will be climaxed with a reunion of the Bill Dupont Party. Tuesday evening will be entertainment night and a full evening of professional entertainers will be provided. The final highlight of the convention will be the banquet on Wednesday evening in the James Whitcomb Riley Room of the Claypool Hotel, at which Dr. Edward C. Elliott, President of Purdue University, will preside as toastmaster.

Lawrence A. McKenna of Cleveland is general chairman of the convention committee, with Ed. A. Arnott of Indianapolis as local chairman. Entertainment for the ladies is under the direction of Chairwoman Eleanor Arnott.



Dr. Edward C. Elliott
. . . will address PCO's Banquet

Lambert Answers FTC Actions

In answer to a recent order from the Federal Trade Commission to cease and desist from violating the Robinson-Patman Act, officials of Lambert Pharmacal Co., St. Louis, have pointed out that the order is based on a complaint issued in March, 1939, and relates to a sales compensation plan which was then in effect but has since been revised. The order, said John S. Norton, Lambert vice-president, was a mere formality.

The FTC order was directed against the practice of granting different compensations to wholesalers; ten per cent of the previous month's net billing being granted to one group, while another group was allowed five per cent of the previous month's purchases. The same charges were made in reference to compensations granted to different groups of retailers.

A second FTC complaint charges the Lambert company with the dissemination of misleading information in the sale of "Listerine Antiseptic." The complaint declares that dandruff is not recognized as having an infectious origin nor as being caused by the germ claimed by Lambert and charges that "Listerine" is not a cure or remedy for dandruff. Also criticized are representations that Listerine will prevent and arrest colds and sore throats, that bad breath is usually caused by the fermentation of food particles in the mouth and that Listerine quickly halts such food fermentation.

Cole Chemical to Expand

Cole Chemical Corp., Long Island City, N. Y., has recently increased its capital from $20,000 to $100,000 and plans construction of a new building on a site adjacent to the present plant, according to David D. Catts, president. The company plans also to add to its products a number of items for industrial maintenance.

U. S. Carnauba Imports Up

Imports of carnauba wax into the United States from Brazil during the first half of 1940, were almost 20 per cent greater than during the first six months of 1939. Imports for the first half of 1940 amounted to 11,531,274 pounds, valued at $5,006,918, as compared with 9,633,273 pounds, valued at $2,844,409 for the first half of 1939.

Martin Szamatolski Dies

Dr. Martin Szamatolski, former factory manager for Givaudan-Delawanna, Inc., aromatic chemicals, New York, died recently at his farm in Henderson, N. C., after a long illness. He was credited with having improved processes for the manufacture of terpineol, phenyl ethyl alcohol and artificial musks.

Norwich Earnings Down

Norwich Pharmacal Co. and subsidiary have recently reported a profit for the quarter ended June 30 of $164,383 equal to 21 cents a share on the common stock, compared with

CARNAUBA WAX

Choice Selections

The maintenance of our own organization in Brazil places us in a unique position as importers of this product.

ALL GRADES
SPOT OR FUTURES

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LENAPE TRADING CO., INC.
225 BROADWAY NEW YORK

Sales Representatives

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Clifford L. Ions Co.
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CHICAGO
Arthur C. Trask Co.
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SYRACUSE, N. Y.
L. R. Cross
418 Solar St.

PHILADELPHIA
R. Peltz Co.
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TETRA SODIUM PYRO PHOSPHATE

Crystalline-Anhydrous

Alkalies
Paradichlor benzene
Carbon Tetrachloride
Tri Sodium Phosphate

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We are in a favorable position to work with you on your requirements for these and other chemicals used in the manufacture of soaps, detergents and sanitary products. Why not check with us?

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HOOKER CHEMICALS
FOR MANUFACTURERS

Hooker chemicals include all commercial and technical grades especially adapted to the requirements of manufacturers of

SOAPS, INSECTICIDES, AND SANITARY CHEMICALS

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Paradichlorbenzene (PARADI)
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Cyclo Hexanol
Methyl Cyclo Hexanol
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PETROLEUM SULPHONATES
(Naphthenic or Mahogany Soaps)

FILTRABLEND
Line of ready-made bases for soluble oils, textile oils, metal cutting oils, wax emulsification, etc.

FILTRONA
Highly purified dispersing agent for all technical oil emulsions.

FILTRAWAX
Pure White — Amorphous Structure

Ask for Complete Information

Distributors Wanted in Several Territories

PETROLEUM SPECIALTIES, INC.
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$224,493, or 28 cents a share for the same quarter last year. For the six months ended June 30, the company reported a profit of $370,945, or 46 cents a share, against $390,351, or 49 cents a share in the first half of 1939.

New Patents

(*From Page 69*)

ented July 30, 1940, by Fred Weaver Muncie, New Brunswick, New Jersey, assignor to Colgate - Palmolive - Peet Company, Jersey City, New Jersey. A compound of the class consisting of boric acid esters, boric acid-sulphuric acid esters, boric acid-phosphoric acid esters, and salts of said esters, of at least one compound of the class consisting of aliphatic partial ethers and esters of polyhydroxy alcohols, wherein the aliphatic substituent on the polyhydroxy alcohol contains at least eight carbon atoms.

No. 2,209,744, Japanese Beetle Insecticide, patented July 30, 1940, by Charles J. Austin, Elkton, Maryland. A Japanese beetle insecticidal spray, said spray consisting of the product of a boiled mixture of substantially 10 pounds of rosin, 1 pound of sodium hydroxide, 1 pound of fish oil soap and water, and an aqueous solution comprising substantially 1 pound of corrosive sublimate, and 1 ounce of nicotine sulphate.

No. 2,209,769, Germicide, patented July 30, 1940, by William H. Engels and John Weijlard, Rahway, New Jersey, assignors to Merck & Co., Inc., Rahway, New Jersey. A composition of matter comprising a substance selected from the group consisting of rotenone and rotenone-bearing extracts, a substance selected from the group consisting of emollient vegetable and animal fats and oils, and a non-toxic, non-aqueous volatile solvent the rotenone being present in sufficient quantity to effectively destroy "Demodex Folliculorum," and the volatile solvent, being present in a quantity sufficient to dissolve the rotenone and stabilize the mixture, but insufficient to harmfully effect the skin of a hirsute animal.

No. 2,209,785, Cleansing Fluid, patented July 30, 1940, by Cyrus E. Manierre, Chicago, Illinois. A cleansing composition consisting of petroleum solvent 86 per cent by volume, sulfonated oil 8 per cent and oleic acid 6 per cent, said solvent being one of the general class of turpentine substitutes having a flash point above 105°F., an initial boiling point no less than 300°F., and an end point between 350° and 450°F., and said sulfonated oil being a neutral sulfonated oil selected from the group consisting of castor, olive, teaseed and neatsfoot oil.

M. & H. Laboratories Move

M. & H. Laboratories, Chicago manufacturers of polishes and liquid wax for the jobbing trade have purchased the two-story brick building at 2705 Archer Ave. Offices and plant equipment have already been moved to the new location and it was expected that production would be started in the new plant by August 15th. The new building, with 14,000 sq. ft. of floor space, will give the company larger and more efficient facilities to take care of increased business.

Sales Plans for "Snow Clean"

Fred Herman & Son, Chicago, operating as the F. H. S. Mfg. Co., are making plans for an intensified sales campaign on behalf of their "Snow Clean" bleach. A preliminary survey has been started to determine where distribution can best be effected, to be followed by test advertising and later by extensive use of newspaper space and radio time in mid-western key cities. The account is being handled by Robert Kahn & Associates, Chicago.

Building Plant Addition

Perfection Sweeping Compound Co., Chicago, is erecting an addition to their plant at 95th St. and Baltimore Avenue, that city. Providing 2,000 square feet of floor space, this will almost double the size of the company's factory.

Bids and Awards

(*From Page 51*)

dry soap in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Carnauba Wax Bids

E. A. Bromund Co., New York, submitted the low bid of 44.25 cents on 60,000 pounds of carnauba wax for delivery to Mare Island, Calif., in a recent opening by the Bureau of Supplies and Accounts, Navy Department, Washington, D. C. In the same opening, Smith & Nichols, New York, submitted a low bid of 41 cents on 60,000 pounds of carnauba wax, f.o.b. works. In another opening by the same department on 40,000 lbs. of carnauba wax for delivery to Norfolk, Va., Smith & Nichols, New York, entered a low bid of 41.38 cents a pound.

Liquid Toilet Soap Bid

Sanitary Floor Compound Co., Harrison, N. J., bid low on 3,000 gallons of toilet soap at 18.75 cents in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Dishwashing Compound Award

Calgon, Inc., Pittsburgh, was awarded a contract for dishwashing compound valued at $15,000 in a recent opening by the Medical Department, War Department, Washington, D. C., under the Walsh-Healey Act.

Metal Polish Bids

R. M. Hollingshead Corp., Camden, N. J., submitted low bids on 100,000 pints of liquid metal polish at 6.22 cents, delivered eastern yard and 7.52 cents, delivered western yard, in a recent opening by the Bureau of Supplies and Accounts, Navy Department, Washington, D. C. In the same opening, Sentinel Chemical Co., Oakland, Calif., entered a low bid of 6.13 cents on 100,000 pints liquid metal polish, f.o.b. works.

Insecticide Award

R. J. Prentiss & Co., New York, was awarded the contract on 330 gallons of insecticide concentrate at $4.74 in a recent opening by the Army Quartermaster, Brooklyn.

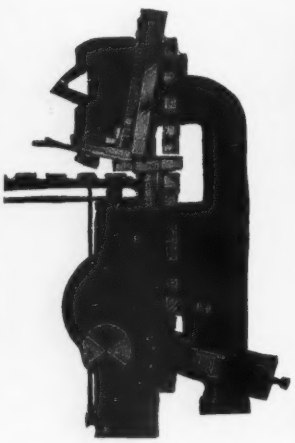
Furniture Polish Bid

Waxaid Co., Baltimore, bid low on 1,200 cans of furniture polish at 11.8 cents in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Liquid Cleaner Bid

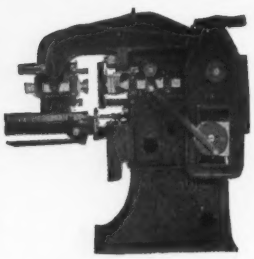
Harley Soap Co., Philadelphia, bid low on 1,660 gallons liquid cleaner at 22 cents in a recent opening by the Procurement division, Treasury Department, Washington, D. C.

Special Offerings of SOAP MACHINERY *Completely Rebuilt!*

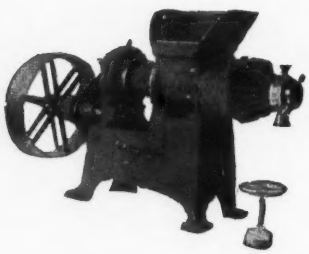


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

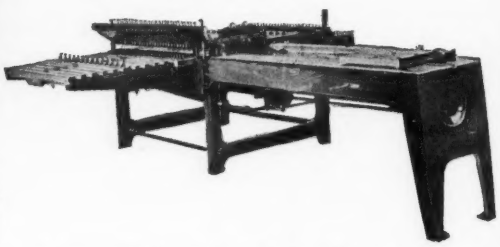
H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.



2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

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Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

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ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- H-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H-A Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment— we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO — Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

Classified Advertising

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Sales Promotion—Man with extensive background in merchandising and advertising in drug and chemical specialties, insecticides, etc., chiefly with two large firms, desires new connection in sales promotion and advertising. For further details, communicate with Box No. 882, care *Soap*.

Soap Expert—Man with 30 years practical experience in soap plant operation, expert on toilet and laundry soaps, is available for part time consultation on cash reduction, quality improvement and other problems. For further details write to Box No. 881, care *Soap*.

Soap Maker and Chemist: Backed by years of experience and capable of analyzing and recreating anything pertaining to soap. Blue mottled soap, etc. Address Box No. 891, care of *Soap*.

Manager: Soap maker-chemist, A. B., A. M. with extensive practical plant experience in soap mfg. and glycerine recovery. Can manage small or large plant. Now engaged but desires new connection. Address Box No. 879, care *Soap*.

Insecticides and Chemicals—Young man with two years experience selling agricultural insecticides, chemicals, etc., for large manufacturer desires new position in sales capacity. 26 years old, college graduate in chemistry. For further details address Box No. 875, care *Soap*.

Chemist: Man with practical laboratory background in drugs, soaps, cosmetics, desires position in laboratory or plant of manufacturing. 28 years of age; graduate of chemistry from recognized university. For further details communicate with Box No. 873, care *Soap*.

Organic Chemist: Specializing in the development and production of insecticides, desires new connection. Extensive practical experience. Excellent references. Address Box No. 892, care *Soap*.

WHEN BUYING MACHINERY FROM US . . .

You get everything the name "Consolidated" stands for in 23 years of service and growth

Save TIME and MONEY with these GUARANTEED values.

SELECTED SPECIALS

1—Sargent 54" x 72" single Chilling Roll.
2—Proctor & Schwartz Soap Chip Dryers, steel frame; 1 with single cooling roll.
2—Jones Vertical Automatic Soap Presses.
1—Jones Horizontal Automatic Soap Press.
3—Houchin Plodders, 10", 8".
2—Pneumatic Scale Carton Packaging Units.
2—Automatic Soap Wrapping Machines.

Crutchers	Foot and Automatic Soap Presses	Filter Presses
Soap Kettles		Soap Frames
Powder Mixers	Cutting Tables	Powder Fillers
Granite Mills	Pulverizers	Labellers
Plodders	Soap Pumps	Tanks
Slabbers	Soap Chippers	Boilers

Send for New Illustrated Circular

CONSOLIDATED PRODUCTS CO., INC.
15-21 PARK ROW NEW YORK, N. Y.
BArclay 7-0600 Cable Address: Equipment
We buy your idle Machinery—Send us a list.

If you demand rigid "hard-to-reach" specifications on the FATTY ACIDS for your soaps and cosmetics . . . "ASK WECOLINE."

Wecoline is particular about its quality . . . particular that its products shall be known for high standards of refining and fractionation.

DISTILLED FATTY ACIDS
Exceptionally Pure and White

Our unique facilities and experience are at your service for specially processed vegetable fatty acids and refined oils.

Write for Booklet "30 Years of Progress"

COCONUT
TEASEED
LINSEED
PALM
CORN
SOY BEAN
COTTONSEED

Special Fatty Acids: STEARIC—LAURIC—CAPRIC—WHITE OLEIC

WECOLINE Products, Inc. BOONTON, N.J.
Sales Offices: NEW YORK.....CHICAGO.....BOSTON

SOAP DIES and MOULDS

—for—
TOILET SOAPS
LAUNDRY SOAPS AND
BATH TABLET
STAMPING

For Foot and Power Presses

Established 1894

ANTHONY J. FRIES & SON CO.

717 Sycamore Street — Cincinnati, O., U. S. A.

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

PYLAM PRODUCTS CO., INC.

Manufacturing Chemists, Importers, Exporters

799 Greenwich St. — New York City

Cable Address: "Pylamco"

Do You Need Special

ROTENONE and DERRIS RESINS?

No matter what your requirements may be the chances are we can supply a suitable product. DERRIS, Inc., raw materials are used in all types of finished insecticides —household, horticultural and agricultural. Investigate the advantages of using these specialties in your sprays and powders.

Derris Powder — Cube Powder
of Finest Grind

DERRIS, Inc.

79 WALL STREET — NEW YORK, N. Y.

TESTED DISINFECTANTS

Guaranteed phenol coefficients

Coal Tar, Coefs 2 to 20
Pine Oil, Coefs 3 and 4
Cresylic, Coef. 2.5 plus

Every batch is tested bacteriologically by F. & D. A. methods by a well known commercial laboratory (name on request).

"GOOD" PRODUCTS at "GOOD" PRICES

MANUFACTURED BY US UNDER CAREFUL LABORATORY CONTROL

POTASH SOAPS

Guaranteed soap content
Uniform consistency
Controlled alkalinity

Liquid Soaps (up to 40%)
Vegetable Oil Soaps
Pine Scrub Soaps (Liquid and Jelly)
Sassafrassy Scrub Soap
Potash Oil Auto Soap
U. S. P. Green Soap

JAMES GOOD, Inc.

Manufacturing Chemists Since 1868

2112 E. Susquehanna Avenue — PHILADELPHIA, PA.

Positions Open

Wanted: Soap maker and Superintendent. Must be able to furnish A-1 references and be well versed in manufacture of laundry soaps as well as production end. Give all particulars in first letter. Address Box No. 885, care *Soap.*

Established Eastern manufacturer wants bondable, experienced salesman, selling direct in bulk with car and following, to open mid-western and southern territories, with progressive line of floor maintenance products, including a carnauba, no rub wax, that is waterproof upon drying and a cleaning compound that is proven. The line definitely insures repeat orders. Protected territories on a profit sharing basis. Write all particulars. Address Box No. 883, care *Soap.*

Sales Manager wanted—An old established midwestern manufacturer of a complete line of Janitor Supplies and Appliances wants an aggressive, wide awake producer who is willing to prove his own merits and compensation by increasing sales. To those who are interested, write, giving full particulars as to age and record. Write Box No. 888, care *Soap.*

Wanted: Experienced man in Sanitary Chemical and Specialty field to take charge of sales. Excellent opportunity for man of ability. Must be well recommended. Address Box No. 880, care *Soap.*

Soap Executive Wanted: Man wanted for responsible position with large organization. He must have a close knowledge of the commercial side of soap manufacture, selling, etc., and must have had experience with one or two well-known soap companies. The man should be not under 35 or over 50. Preferably he should have a college background and considerable executive experience. Details may be sent in complete confidence to Box No. 871, care *Soap.*

Soap Expert—Manufacturer in South America desiring to install process and equipment for manufacturing toilet soaps, requires the permanent services of superintendent. Man should have knowledge of Spanish and be not over 45 years of age. Write full details in Spanish to Box No. 884, care *Soap.*

Miscellaneous

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

FINEST . . *for Every Purpose*

Victoria
TOILET TISSUES

Craftsmen in the art of fine paper-making for 60 years.

•

Distributed by Reliable Paper Merchants everywhere.

Made by
VICTORIA PAPER MILLS COMPANY
Founded 1880.

FULTON, NEW YORK

ADD...
a New Profitable Item to Your Line . . .

WINDSOR

•

PIGMENT PASTE WAX

•

Restores and adds life and color to Cement, Stone, Magnesite, special composition and painted floors.

Especially recommended for Showrooms, Corridors, Packing Plants, Bottling Works, Basements, Cafeterias, Schools, Hospitals, Locker Rooms, etc.

Colors . . . Red, Brown, Green, Black, Grey, Buff.

COLOR CARD AND PRICE LIST YOURS FOR THE ASKING.

WINDSOR WAX CO., INC.
611 Newark Street **Hoboken, N. J.**
New York Office: 53 Park Place

HOCKWALD'S DISPENSERS

No. 1N Wall Type **No. 2N Basin Type**

All parts replaceable including glass globes. Can be disassembled in two minutes without mechanical skill, yet when in operation it is securely locked together. No cement or plastics used in any part of the machine.

WRITE FOR DESCRIPTIVE LITERATURE AND PRICES

Hockwald Chemical Company

135 Mississippi Street
San Francisco, Cal.

LARGEST PACIFIC COAST MFR. OF POTASH SOAPS AND SANITARY PRODUCTS

A New Departure In Crutcher Performance

The HUBER ELECTRO PERFECTION CRUTCHER is now available in a new model,—with four forward and reverse speeds. The flexibility in operating technique afforded by this wider choice of crutcher speeds should be decidedly interesting to many soap makers. Available in three sizes,—1,500, 2400 and 3200 pounds.

HUBER MACHINE CO.

"Builders of Good Soap Machinery for the Past 45 Years"

265 46th STREET BROOKLYN, N. Y.

FOUGERE SAVON SUPREME

A FINE PERFUME OIL FOR SOAPS AND ALL SOAP PRODUCTS

FOUGERE SAVON SUPREME

We shall be pleased to forward a sample and full information

COMPAGNIE PARENTO, Inc.

Croton-on-Hudson New York

SOCONY-VACUUM

NAPHTHENIC ACIDS

● CRUDE, SEMI-REFINED AND FULLY REFINED GRADES AVAILABLE IN VARIOUS ACID NUMBER RANGES

SOCONY-VACUUM OIL COMPANY, INC.
26 Broadway, New York

GENERAL PETROLEUM CORPORATION
108 W. 2nd St., Los Angeles, Calif.

For Sale: 50-H. A. 1200 lb. Soap Frames; H. A. 22" Soap Chipper; H. A. Champion Slabber; Jones Automatic Laundry Press; Proctor and Schwartz 3 section Soap Chip Dryer with 36" roll; Garrigue Glycerine Evaporator, 225 lb. per hour; Pumps; Kettles; Crutchers; Tanks; etc. Send for latest bulletins. Brill Equipment Corporation, 183 Varick Street, New York City.

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 886, care *Soap.*

Rebuilt Guaranteed Machinery: Crutchers; Plodders; Jones Automatic Soap Press; Foot Presses; Proctor Soap Dryer; Lehmann 3 Roll Inclined Water Cooled Steel Roller Mill; 4 Roll Stone Mill; Johnson Carton Sealers; Powder Fillers; 6 Knife Chipper, Mixers; Grinders, Boiling Kettles; Cutting Tables; Soap Frames; Filters & Filter Presses, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome Street, New York City.

Wanted—To buy or hire, small or medium size laundry and powdered soap factory. Also looking for superintendent soapmaker. Address Box No. 887, care *Soap.*

Valencia Pumice

Reg. U.S. Pat. Off.

an

AMERICAN PRODUCT

Similar to Italian Pumice
In physical and chemical properties.

Write for samples and 12 page booklet of information

BARNSDALL TRIPOLI CORPORATION
PUMICE DIVISION
(Subsidiary Barnsdall Oil Co).
SENECA, MISSOURI, U. S. A.

COLORS
for

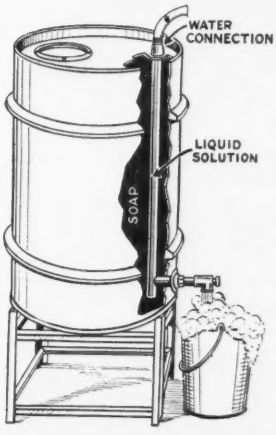
Toilet Soaps — Shampoos
Liquid Soaps — Lotions
Para Blocks — Hand Soaps
Shave Creams — Sweep Compounds
and other Chemical Specialties

* * * *

Does your product require a *certified color* under the new law? Let us advise you, and supply you with exactly the right color for the right purpose!

Interstate Color Co., Inc.
9 Beekman Street — New York
"Color it for greater sales appeal."

Peck's Dispenser Soaps
in ideal economy Soap Saving Drums
Nu-Crown—Varnishoyl—Babco Bases



- Convenience
- Efficiency
- Non-Clogging
- Economy

A convenient system of soap dispensing. In use often or only occasionally, the conversion is always a uniform solution.

Add water thru top of drum and let stand several hours, then draw soap solution from bottom. Can then be diluted further if desired.

We invite your inquiries

Peck's PRODUCTS COMPANY
5224-40 NORTH 2nd ST., ST. LOUIS, MO.
NEW YORK . . . . KANSAS CITY
Manufacturers for Jobbers Exclusively

CRESYLIC ACID

• • •

HIGH BOILING
TAR ACIDS

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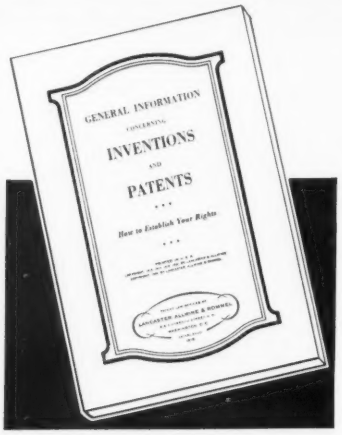
TAR ACID
CREOSOTE OIL

• • •

NAPHTHALENE

• • •

MIRVALE CHEMICAL CO., Ltd.
MIRFIELD YORKS, ENG.



Send for a copy — it's free

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Lancaster, Allwine & Rommel
Registered Patent and Trade-Mark Attorneys
402 BOWEN BLDG. WASHINGTON, D. C.

F. & S.

Quality Colors
for
TOILET SOAPS
LIQUID SOAPS

TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

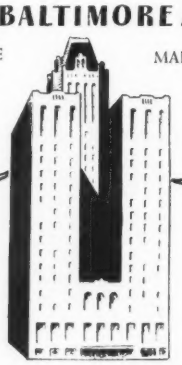
If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.
205 FULTON STREET
NEW YORK, N. Y.
Import—Manufacture—Export

ON your way to see the World of Tomorrow . . . pause for a glimpse of this old city's glorious past. Baltimore—with its roots deep in the proud history of our nation, has matched our country's modernization stride for stride—but the Lord Baltimore, newest, finest hotel in the city, has not lost an appreciative sense of what old-time Baltimore hospitality meant.

LORD BALTIMORE *Hotel*
BALTIMORE MARYLAND



BREAK YOUR TRIP WITH A PLEASANT STOPOVER IN BALTIMORE

Raw Materials and Equipment

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products. equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 137, for page numbers. *"Say you saw it in SOAP."*

ALKALIES

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
Columbia Alkali Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Ampion Corporation (Soaps and Sanitary Chemicals)
Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Mfg. & Dist. Co. (Soaps and Sanitary Chemicals)
Chemical Supply Co. (Disinfectants, etc.)
Clifton Chemical Co. (Soaps and Sanitary Chemicals)
Davies-Young Soap Co. (Soaps and Floor Wax)
Federal Varnish Co. (Wax Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
James Good, Inc. (Sanitary Chemicals)
Harley Soap Co. (Soap Specialties)
Higley Chemical Co. (Floor Seal)
Hockwald Chemical Co. (Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Pecks Products Co. (Soaps and Sanitary Chemicals)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Geo. A. Schmidt & Co. (Soaps)
Superior Soap Corp. (Soaps and Waxes)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Twin City Shellac Co. (Wax Products)
Uncle Sam Chemical Co. (Sanitary Chemicals)
T. F. Washburn Co. (Wax Products)
White Tar Co. (Disinfectants, etc.)
Windsor Wax Co. (Wax Products)

CHEMICALS

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Chemical Mfg. & Dist. Co.
John A. Chew, Inc.
Columbia Alkali Co.
Cowles Detergent Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Neville Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.
Tamms Silica Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Owens-Illinois Glass Co. (Bottles and Closures)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Clifton Chemical Co.
Fuld Bros.
Garnet Chem. Corp.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

American Cyanamid & Chemical Corp.
Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chem. Co.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
Mixing Equipment Co. (Tanks, Mixers)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machy.)

Feature the new 4-in-1* Applicator in connection with your self-polishing wax, varnishes, seals, etc.

It will make your customers and prospects more satisfied with your own products.

Don't be satisfied with anything less than the newest and best.

The 4-in-1 Applicator is the cheapest in the long run.

* Patent Pending

Send for Samples and Literature

AMERICAN STANDARD MFG. CO.
2509-13 S. Green St. Chicago, Ill.

Simplex Non-Clog

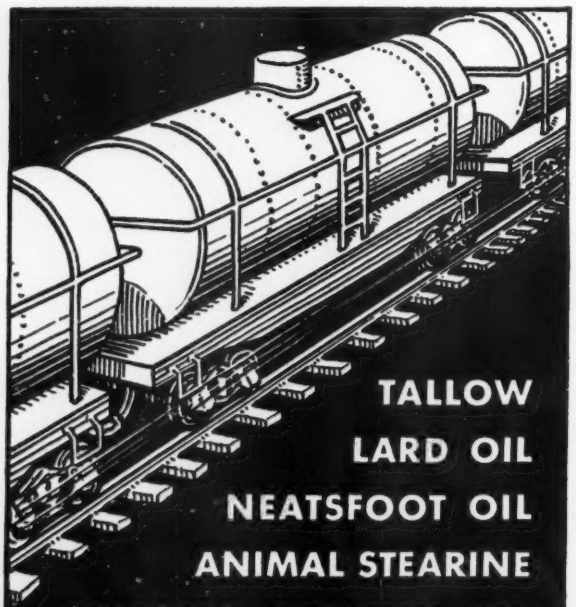
Simplex Junior

Two *New* All-Metal

DISPENSERS for POWDERED SOAPS

Rugged construction . . . especially designed for hard use in shops, factories, garages, etc. . . . simple adjustment regulates flow of soap . . . lock to wall, making dispensers theft-proof . . . Write for further particulars and prices.

Presto Manufacturing Co.
Curfew and Myrtle Streets
St. Paul Minnesota



TALLOW
LARD OIL
NEATSFOOT OIL
ANIMAL STEARINE
ACIDLESS TALLOW OIL

Prompt Delivery—Drums, Barrels, or Tank Cars.

INDEPENDENT MANUFACTURING CO.
Bridesburg P. O. Philadelphia, Pa.

Say You Saw It in Soap!

THE average business house receives a great many inquiries for its products or services every year which cannot be attributed to any special source. A vast majority of these probably originate from some form of advertising but, due to the general tendency toward not mentioning the names of publications, cannot be directly traced.

When you write to anyone advertising in this publication, say you saw it in SOAP. The advertiser will appreciate it—and so will we!

The Publishers

Raw Material and Equipment Guide

NOTE: This is a classified list of the companies whichadvertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 137, for page numbers. *"Say you saw it in SOAP."*

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Barnsdall Tripoli Co. (Pumice and Tripoli)
Crosby Naval Stores, Inc. (Pine Oil and Rosin)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
General Petroleum Corp. (Naphthenic Acids)
Hercules Powder Co. (Pine Oil, Rosin, Ins. Activator)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Newport Industries, Inc. (Pine Oil and Rosin)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Steryl Prods. Corp (Toilet Deodorizer)
Tamms Silica Co. (Silica, Volcanic Ash, etc.)
Victoria Paper Mills Co. (Toilet Tissues)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Independent Manufacturing Co.
Industrial Chemical Sales Div.
Leghorn Trading Co.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Wecoline Products Co.
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Rifa—New York, Inc.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
General Petroleum Corp.
Pennsylvania Refining Co.
Petroleum Specialties Inc.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.
Whitmire Research Corp.

SILICATES

E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Ampion Corp.
Bobrick Mfg. Co.
Clifton Chemical Co.
Fuld Bros.
Garnet Chem. Corp.
Hockwald Chemical Co.
Presto Mfg. Co.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Dula Manufacturing Co. (Electric Steam)
Fumeral Co. (Spraying Systems)

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.)

American Cyanamid & Chem. Corp.
T. G. Cooper & Co.
Innis, Speiden & Co.
Lenape Trading Co.
The Mac Lac Co. (Shellac)
Mantrose Corp. (Shellac)
Twin City Shellac Co. (Shellac)

Oxford English Kaolin

• Finest and whitest English China Clay—Big stock carried in Chicago warehouse. Write for low prices!

Triple 000 Multi-cell

• Air-floated, diatomaceous earth —finest grade—free from grit or impurities. We'll quote prices that are right!

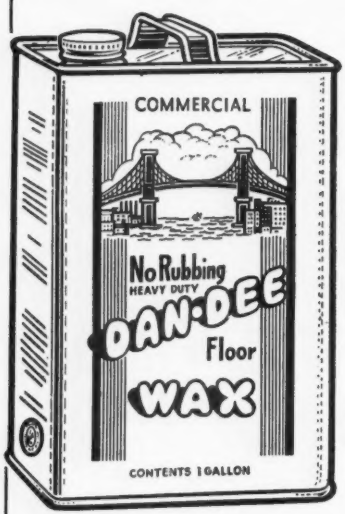
SILICAS and Silica Sand

• Amorphous, crypto crystaline and crystaline. Water ground, water floated, and air floated grades. *Special grinds for metal polish use to replace imported silicas.* SAVE MONEY—Send us your specifications.

TAMMS SILICA CO 228 N LA SALLE ST. CHICAGO, ILLINOIS

MADE EXPRESSLY FOR COMMERCIAL USE

DAN-DEE HEAVY DUTY WAX



EXTRA HEAVY BODY

WATER RESISTING

SLIP RETARDING

DURABLE

PRIVATE LABELS SUPPLIED

Specially Priced for Drums, ½ Drums and 5 Gal. Cans

Full Details—Generous Samples Available Upon Request

TWIN CITY SHELLAC CO., Inc.

340 FLUSHING AVENUE BROOKLYN, N. Y.

Also Manufacturers of Liquid and Paste Wax

SPECIALTY SOAP PRODUCTS

Liquid Soap Base
Potash Oil Soap
Liquid Soap
U. S. P. Green Soap
Auto Soaps
Shampoo
Pine Oil Soap
Shampoo Base
U. S. P. Cresol Compound
Coal Tar Disinfectants
Pine Oil Disinfectants
Insecticides
Liquid Floor Wax

We manufacture for the trade only

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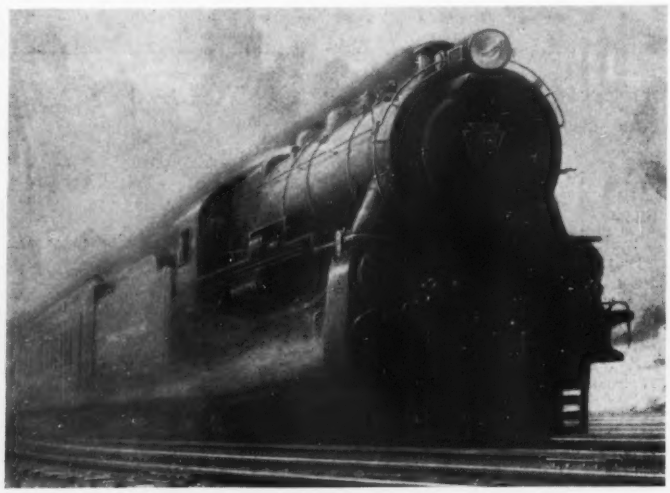

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* * *

In keeping with the militaristic flavor of the times, the Army Worm is invading and ruining the lawns of Washington, D. C., according to the Department of Agriculture. This is the first serious infestation in 26 years,—the last time being in 1914, the year the World War broke out. Shouldn't the entomologists look into this? Maybe these worms read the papers.

* * *

According to *Hygeia*, a journal of the American Medical Association which publishes stuff it wants the public to read,—and believe,—a certain woman got the sneezes or itch or something every time she went to the movies. In its customary profound manner, the popular journal of this holy body rendered judgment as follows: "Mrs. Smith reacted violently to pyrethrum, a disinfectant sprayed in theatres."

* * *

Apparently, with the current high price of scrap steel or somethin', some soapers think that the present is a good time to rip out their old soap kettles and go modern. Quickie soaps are the new vogue.

* * *

Incidentally, among other things, we beg leave to remind anybody who has pigeonholed a subscription renewal notice for *Soap & Sanitary Chemicals*, instead of sending in that check pronto, that the A.B.C. makes us take your name off the list if you delay payment too long. Don't miss any issues. Take care of that subscription renewal now!

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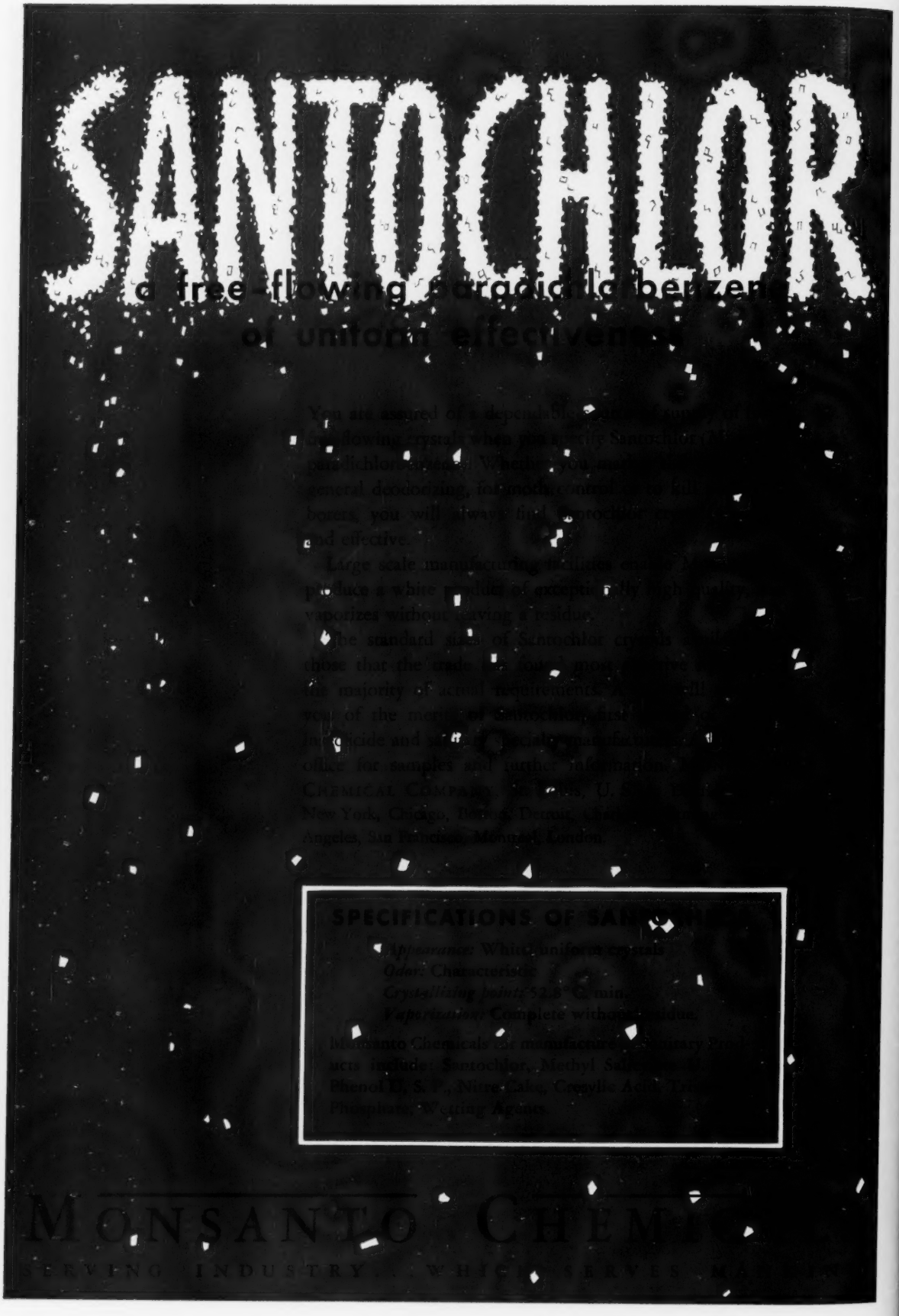
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